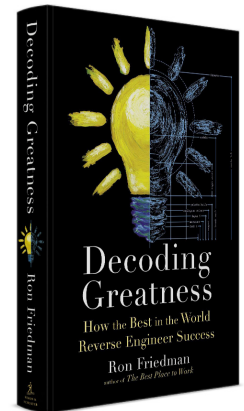


Decoding Greatness

How the Best in the World Reverse Engineer Success

by **Ron Friedman**



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THE SUMMARY IN BRIEF

For generations, we've been taught there are two ways to succeed—either from talent or practice. In *Decoding Greatness*, award-winning social psychologist Ron Friedman illuminates a powerful third path—one that has quietly launched icons in a wide range of fields, from artists, writers, and chefs, to athletes, inventors, and entrepreneurs: reverse engineering.

To reverse engineer is to look beyond what is evident on the surface and find a hidden structure. Using eye-opening examples of top performers and groundbreaking research on pattern recognition, skill acquisition, and creative genius, Friedman reveals the staggering power of reverse engineering and teaches you how to harness this vital skill for yourself.

You don't have to be a genius to achieve greatness, but you do need a method for getting there. Bursting with unforgettable stories and actionable strategies, *Decoding Greatness* is an indispensable guide to learning from the best, improving your skills, and sparking breakthrough ideas.

IN THIS SUMMARY, YOU WILL LEARN:

- Why creativity is not the most important part of innovating.
- The importance of pattern recognition.
- To take apart models you admire, pinpoint what makes them work, and apply that knowledge to develop novel ideas, methods, and products.
- Strategies to bridge the gap between vision and ability.

Introduction

When Michael Dell received an Apple II for his sixteenth birthday, he didn't so much as bother turning it on. Instead, he quietly carried it to his room, closed the door, and—to the sheer horror of his parents—dismantled it piece by piece so he could examine how it was assembled. A few short years later, he founded Dell Computers, a company that set itself apart by inviting buyers to customize their computers one component at a time.

And the laptop used to type this sentence would not exist had Compaq not reverse engineered an IBM personal computer and applied their learnings to develop portable computers.

But the practice of reverse engineering, of systematically taking things apart to explore their inner workings and extract important insights, is more than an intriguing feature of the tech industry. For a surprising number of innovators, it's a tendency that appears to have emerged organically, as something of a natural inclination.

No matter what you do for a living, you're facing significantly more competition than your colleagues did a decade back. You're no longer up against professionals only in your region. You're now competing with experts around the globe. Never before has it been simpler for clients and hiring managers to identify the best in your field and invite them to collaborate.

In a world where expertise is a moving target, the ongoing pursuit of knowledge is imperative to getting ahead. Staying on top of new innovations and professional trends is no longer just for go-getters—it's a basic requirement for staying relevant. Reverse engineering is a tool you can apply in your field to learn from your contemporaries, extract valuable ideas, and evolve your work in exciting new directions.

PART I: THE ART OF UNLOCKING HIDDEN PATTERNS

The Mastery Detectives

To reverse engineer is to look beyond what is evident on the surface and find a hidden structure—one that reveals both how an object was designed and, more important, how it can be re-created. It's the ability to taste an intoxicating dish and deduce its recipe, to listen to a beautiful song and discern its chord progression, to watch a horror film and grasp its narrative arc.

Many of the painters we now celebrate as creative geniuses devoted a significant portion of their careers to copywork. Claude Monet, Pablo Picasso, Mary Cassatt, Paul Gauguin, and Paul Cézanne all developed their skills by copying the works of the French painter Eugène Delacroix. Delacroix himself spent years copying the Renaissance artists he grew up admiring.

What makes copywork so effective is that it forces an artist or writer to do more than simply recall content. Reproducing a piece demands that he or she pay careful attention to the organizational decisions and stylistic tendencies reflected in an original work. It is an exercise that enables novices to relive the creative journey and invites them to compare their instinctive inclinations against the choices of a master.

Ultimately, what the process reveals is decision-making patterns. And once an artist or writer's underlying code is broken, it can be defined, analyzed, and applied to producing original works. The same can be said of successful entrepreneurs.

How to Reverse Engineer a Billion-Dollar Franchise

What separates celebrity entrepreneurs like Jeff Bezos, Mark Cuban, and Richard Branson from everyone else? Research suggests it's not just their creativity, intelligence, and drive. Successful entrepreneurs also excel at something else: pattern recognition.

When we think about entrepreneurs, we tend to think about creative solutions, fresh ideas, and above all originality. As it turns out, that line of thinking is exactly wrong. More experienced entrepreneurs—those who spend decades leading successful businesses and reliably launch profitable ventures every few years—focus on something completely different: viability.

Decades of experience have taught them that successful businesses fit a pattern. A few key factors tend to predict whether or not a venture will flourish. And nowhere are these patterns more evident than in the business models of other profitable companies.

What sort of patterns might a discerning entrepreneur deduce? For one thing, that winning business strategies can be applied across industries. When San Francisco chef Steve Ells was considering launching a taqueria in the 1970s, he knew his chances of breaking through were slim. The Bay Area was flooded with Mexican eateries, and the competition was overwhelming. So he took his idea for a streamlined Mexican restaurant to a place where tacos were relatively rare: Denver. He called it Chipotle.

In recent years, algorithms like Tinder's have upended a wide swath of industries, in large part because of their ability to quickly detect patterns.

What makes Ells's story so compelling is that his shop's success can, in large part, be traced back to a single decision: taking a product that's popular in one location and introducing it to an entirely new geographic region. That's an approach that applies to a lot more than tacos.

In the automotive industry, reverse engineering has played a pivotal role for generations. In 1933, after disassembling a new Chevrolet, Kiichiro Toyoda convinced his family to branch out from building weaving looms by creating an automotive development program. Three years later, they had their first car and renamed the venture Toyota (a simplified version of the family name produced by eight brushstrokes—a lucky number in Japan).

Almost a century later, Toyoda's once-maverick approach has been co-opted into standard operating procedure. Today, car manufacturers routinely dissect their rivals' cars, except they don't call the process reverse engineering. They call it "competitive benchmarking."

So how do you do it? How do you take apart work you admire—from your favorite podcast to a competitor's website to an Academy Award-winning film—enabling you to extract its formula and unleash your own creative juices? Is there a reliable road map for deconstructing works we wish to emulate?

Algorithmic Thinking

Alyssa Nathan was 22 when she met Josh Yanover. They exchanged a few shy texts, then a few more. He suggested they go out. On their first date, they visited a paint and wine studio. It went well.

After some time, she noticed that the studio had emptied and employees were cleaning up. She asked one of them if they were getting ready to close. "Sweetie, we've been closed for 45 minutes." It was late, but they weren't ready to call it a night. Not even close.

On a whim, they ventured out to a pizzeria. Josh was crazy about, where they shared a delicious mushroom slice and

their first kiss. It was the perfect date. Less than two years later, they were ready to spend the rest of their lives together and finalizing plans for their wedding.

A Marriage Made . . . From an Algorithm

Alyssa and Josh owe their marriage to an algorithm. They met online on the world's most popular dating app: Tinder. Not too long ago, the idea of searching for a romantic partner on a website was considered an act of desperation. Studies suggest that nearly 40 percent of romantic relationships now begin online and that they tend to be considerably more successful than those initiated in person.

One reason online dating apps are so effective at pairing couples is that they utilize machine learning to identify unspoken preferences—ones people themselves may not consciously realize they possess.

In recent years, algorithms like Tinder's have upended a wide swath of industries, in large part because of their ability to quickly detect patterns. The capacity to distill thousands of clicks, scrolls, and swipes into a formula and then apply that formula to predict future behavior has profound implications for the worlds of business, technology, and even romantic love.

Pattern Recognition: The Basics

Pattern recognition engines have four major components. The first is **data collection**. Before you can start to predict the type of men Alyssa finds attractive, you first need examples of men she likes and men she doesn't. You can get both from her reaction to a handful of profiles, and that's the first step: gathering examples.

Step two is unpacking those examples and **finding important variations**. What's different about these men that could be contributing to Alyssa's decisions? Obviously, there are physical features, like the men's age, weight, and height. But then there is the quality of their profile: the number of photos they post, the length of their biography, and the personality type their description conveys. The more variables you identify in this second phase, the better your chances of pinpointing a factor that prompts Alyssa's interest.

The third step involves **detecting similarities**. What do the men Alyssa finds attractive have in common? What features do they share? Now, how about the men Alyssa rejected? What differentiates them from those she liked? By comparing the characteristics of both groups—men selected against men rejected—a dating algorithm can start to identify the elements driving Alyssa’s decisions.

The last step is when an algorithm applies its analyses to **generate predictions** of men Alyssa will find appealing. It’s here that the options Alyssa is presented with start to look a little cuter, a little more her type. And the more Alyssa swipes, the more accurate the algorithm gets, using Alyssa’s feedback to refine its predictions and improve its performance.

The Curse of Creativity

Simply cloning a formula that works for someone else is ultimately a failing strategy. What you need is a formula that works to complement your unique abilities, interests, and situation. But where exactly do you find one?

You might think that the solution is to deliberately avoid the influence of others entirely and instead strive for complete originality. But this, as it turns out, is also a mistake—especially in projects geared toward a broad audience. If you’re looking to write a blockbuster movie, deliver a winning presentation, or cook a memorable dish, the last thing in the world you want is a flood of novelty.

Why? Because no matter how much audiences claim they want bold, innovative ideas, studies indicate that in practice, they reject them all the time.

Why exactly are we so loath to embrace the new? Because novelty makes us uncomfortable, and that discomfort is unpleasant. Nowhere is this tendency more evident than at the office. At work, we vastly prefer ideas that make us feel safe and confident, especially from those in charge.

Outright mimicry leads us nowhere. Absolute novelty is met with scorn. So what exactly is the right approach?

Don Draper’s Guide to Winning Ideas

Mad Men aired an episode in which the famously volatile Sterling Cooper creative director is pitched a television show in the vein of *Candid Camera*. His response captures what might be the ideal formula for popular appeal: “It’s derivative with a twist. That’s what they’re looking for.”

In other words, the solution is to steer clear of both extremes. The secret to producing work with lasting significance is leveraging a proven formula and adding your unique twist.

Steve Jobs didn’t invent the MP3 player or the cell phone. But he led a team that found a way of combining the two, leading to the iPhone. Back in 1995, two Stanford University students took the way academics cite research articles and applied it to organizing information on the World Wide Web, resulting in Google.

The history of innovation is so dependent on the blending of existing ideas that even books would not have come about had the wine press (which gave us ink) not been combined with the coin punch (which gave us typographic blocks for letters) to produce the world’s first printer.

Blending influences is one way of finding your twist. But it’s an approach with one critical limitation: your ability to locate unique influences. Combining influences works best for those who hunt for inspiration outside the cultural mainstream and import the elements they love best.

PART II: THE VISION-ABILITY GAP

It’s one thing to distill exceptional work into a formula and quite another to reproduce it effectively. As the creator of *This American Life*, Ira Glass, observed, when you are developing your skills, there is often a gap between your vision and your ability:

“What nobody tells people who are beginners—and I really wish someone had told this to me—is that all of us who do creative work, we get into it because we have good taste. But there is this gap. For the first couple of years you make stuff, and it’s just not that good. It’s trying to be good, it has potential, but it’s not. But your taste, the thing that got you into the game, is still killer. And your taste is why your work disappoints you. A lot of people never get past this phase. They quit.”

The divide Glass is describing—the gap between vision and ability—can be debilitating, especially when you have high standards. Harnessed correctly, the desire to perform masterfully and meet your inner standard will provide the motivational fuel for improvement. The challenge, of course, is knowing how to bridge the divide so that the distance between where you are today and where you need to be feels inspiring, not deflating.

How exactly do you do that? It all starts with the first step

to elevating your performance at any task: the Scoreboard Principle.

The Scoreboard Principle

Search the internet for “Ritz-Carlton customer stories,” and you’ll learn that the hotel prepares surprise rose-petal baths on customers’ birthdays, leaves chocolate wrenches in rooms requesting repairs, and mails children the stuffed animals they’ve left behind, along with a photo album of their toy in various hotel locations, including the pool, spa, and gym, enjoying their extended vacation.

How exactly did the Ritz-Carlton become so good at customer service? By relentlessly tracking performance metrics. Each property’s management team monitors a slew of figures, from check-in wait times to advance bookings to employee satisfaction.

Something powerful happens when we link behaviors to metrics. Measurement begets improvement.

But there’s one metric the Ritz Carlton staff monitors obsessively. It’s not the hotel’s financials, nor is it its customer satisfaction ratings. Twenty-four hours after guests leave a Ritz-Carlton property, they receive an email asking them how likely they are to recommend the hotel to friends and colleagues (a metric market researchers refer to as a “net promoter” score). This, the Ritz-Carlton has discovered, is the holy grail. Score well on this item, and you haven’t just executed a successful stay. You have created a raving fan.

Something powerful happens when we link behaviors to metrics. Measurement begets improvement. The moment a metric is introduced, we instinctively pay it more attention and pursue its optimization. Identifying the right metrics can therefore make all the difference between consistent growth and eventual bankruptcy.

How to Design Your Scoreboard

To leverage metrics effectively, we need more than global feedback on performance. We need data that measure our key behaviors and tell us which we are executing well and which we have the potential to improve.

What should you measure? The precise elements worth monitoring will depend on the nature of the task, your level of skill, and your ultimate goals. With that in mind, here are three approaches worth considering:

- The first involves breaking down a single activity into multiple subskills. In the same way that a tennis match consists of different types of shots, most intellectual activities can be broken down into several distinct categories of skill. Suppose, for example, that your job involves pitching your firm to new prospects and you want to develop metrics to track your performance. A number of subskills come into play when you present at meetings, including memorization, delivery, body language, presence, and poise. Recording your pitch and scoring these elements individually will provide you with a clear sense of where your performance is strong and where it needs improvement.
- The second approach is useful for tasks where success has less to do with combining disparate skills than hitting on particular features. By turning features into metrics, you create a measure that offers you immediate feedback on your performance and draws your attention to elements of your work that can be improved.
- A third approach for crafting metrics that track your performance is more holistic than the first two. It involves looking beyond a particular task and evaluating the totality of your performance over the course of a specified time frame.

How to Take the Risk Out of Risk Taking

Growth requires strain. A moderate degree of difficulty is essential to both mental and physical development. Teachers know it. Bodybuilders know it. Athletes know it.

Yet, what’s the one place where stretching our limits and experimenting with new techniques is most challenging? The workplace. Paradoxically, the one domain in which skill building is arguably most essential is the same domain in which learning is also hardest to achieve.

Why is learning at work so hard? When it comes to failure,

the workplace is unforgiving. Every day is game day. There are no opportunities for practice.

A second reason skill-building at work is difficult is that the opportunities for taking risks are surprisingly limited. Businesses, after all, are optimized for efficiency, not employee growth. Then there's a third barrier: even if we do somehow manage to endure the possibility of failure and identify an intelligent risk worth taking, there's still one other crucial impediment to learning in the workplace: the absence of consistent, detailed, and immediate feedback.

But successful organizations take on enormous risks and adapt to market feedback all the time. The best companies don't play it safe. Just how are these organizations able to jeopardize so much risk? By figuring out something crucial: how to take the risk out of risk taking. Using a set of strategic, nimble, and inexpensive practices, many of the most innovative organizations and entrepreneurs are able to reap the benefits of risk taking without putting everything on the line.

Why you need a pseudonym. Operating under a pseudonym is an approach to minimizing the risk in risk taking. It also turns out to be surprisingly common in the world of business. Consider The Gap, a clothing retailer headquartered in San Francisco. The Gap uses subbrands to target different audiences at distinct price points. Instead of risking the possibility of confusing shoppers, it uses Old Navy to appeal to value shoppers, Banana Republic to sell to a more affluent audience, and Athleta to attract activewear buyers.

The Gap creates and acquires new brands even when it can sensibly roll out its new merchandise under an existing brand, in part because it has learned that marketing multiple brands grants it flexibility to take risks and more easily adjust when those risks fail to pay off.

Everyone has heard of Old Navy, Banana Republic, and Athleta. Those are the successes. Few are likely to remember Forth & Towne, Piperlime, and the Gap's other failed attempts to break through to consumers. Those subbrands were quietly abandoned not long after their launch.

Sell first, build later. Nick Swinmurn's life was going nowhere when a billion-dollar lightning bolt struck. The former film student turned minor-league baseball ticket attendant was at the mall, hunting for boots and having no luck. The trouble was he knew precisely what he wanted: a pair of brown Airwalk Desert Chukka boots. Lots of stores had them—just not the ones he wanted.

The year was 1999. Swinmurn was living in the San Francisco Bay area, so the next step seemed obvious: He started a website. It was called Shoesite.com. Swinmurn's nascent business plan had one blip: He didn't have any shoes to sell. Nor did he have the budget to build up his inventory. His business résumé was blank, and he had never even met an investor.

So he walked into his local shoe store, Footwear Etc., and offered a win-win proposition: "I'll take some pictures, put your shoes online, and if people buy them, I'll buy them from you at full price." The manager happily agreed.

Within days, sales started rolling in. And when they did, Swinmurn would personally drive to the mall, pay with his own money, and place the shoes in the mail. A year later, after raising \$150,000 from a few friends, some family, and his chiropractor, Swinmurn renamed the business after the Spanish word for "shoes": zapatos. Then he tweaked a few letters until he had Zappos, a name that seemed "fun and different." Roughly 10 years later, Zappos would sell to Amazon for a staggering \$1.2 billion in stock.

Swinmurn didn't build a massive warehouse and stock it with shoes. Doing so would have required enormous resources, which he did not possess. What did he do, instead? He sold photos of shoes that he could secure after consumer demand was established. By selling a prototype, Swinmurn managed to greatly diminish the risk involved in starting a retail business. He did so by selling first and procuring second.

Practicing in Three Dimensions

Professional tennis players like Serena Williams regularly face serves exceeding 120 miles an hour. That's barely enough time to blink an eye, let alone lift, aim, and swing a racquet. And yet somehow she manages to not only make contact but also hit returns with such precision and power that her opponents are left gawking.

How does she do it? The same way New York Mets slugger Pete Alonso blasted an astonishing 53 home runs in 2019. If you analyze video of any of his moon shots, you'll notice something peculiar: His swing starts before the ball leaves the pitcher's fingertips.

Not long ago, ESPN asked John Harbaugh, head coach of the Baltimore Ravens, to track his time and report back on how he spent a week during the regular season. How many hours does Harbaugh spend watching film? A staggering amount: nearly six hours a day. Harbaugh devotes more time

Public speakers who visualize their performance before getting up onstage experience less anxiety, appear less rigid, and deliver more compelling presentations.

to reviewing previous games than any other activity, including running practices, meeting with players, and mapping out his team's game plan—combined. As a strategic thinker, he understands that learning from past performance is one of the smartest things you can do to prepare for the future.

Directors, athletes, and coaches rely on film to help them learn from the past and make crucial adjustments. Needless to say, they have access to a tool most people lack: objective recordings of performance. So, what about the rest of us? What do you review when there is no tape?

A Beginner's Guide to Reflective Practice

One method that is surprisingly common among top-performing inventors like Thomas Edison, artists like Frida Kahlo, and athletes like Serena Williams is journaling. Developing a daily practice to pause, reflect, and strategize can yield substantial benefits that compound over time.

Journaling by hand, in particular, forces us to slow down. Because most adults think faster than they write, we're compelled to pause and reflect as we wait for our hand to catch up, examining our thoughts in a way that rarely occurs on a busy day. This simple practice can yield surprisingly profound insights, not unlike when a therapist repeats your words back to you, illuminating a hidden motive or a limiting belief.

The case for thinking more and doing less. There is no shortage of Hall of Fame-caliber athletes who credit their success to mental imagery. Hockey great Wayne Gretzky used his imagery routine to practice lasering in on the empty patches of net behind a goalie, picturing them decorated with red lights and ribbons.

Lindsey Vonn is an Olympic medalist who relied on mental rehearsal to gain an edge before competition. Not only did Vonn visualize herself slaloming downhill, she did so while forcing her lungs to suck air in and push it out, simulating the unnerving, treacherous conditions of a high-speed run.

Studies show that surgeons who mentally rehearse procedures in advance of entering the operating room commit fewer errors and experience less stress during surgery.

Musicians who practice playing a piece in their head before sitting down at the piano learn compositions more quickly. Public speakers who visualize their performance before getting up onstage experience less anxiety, appear less rigid, and deliver more compelling presentations.

How to Talk to Experts

Late in the fall of 2001, the hottest ticket in Hollywood was not a glitzy movie premiere or an exclusive award ceremony. It was a private 10-day acting seminar led by the man *Time* magazine had declared Actor of the Century: Marlon Brando.

All the big names were in attendance: Leonardo DiCaprio, Sean Penn, Whoopi Goldberg, Robin Williams. They were there to learn from a legend. This was one of the most accomplished thespians of a generation, the Godfather himself, the trailblazer who had popularized Method Acting, now prepared to reveal the secrets of his craft.

Brando had hired a camera crew for the occasion. He planned to have the footage edited and sold to film schools and acting programs. He even brought on a director to oversee production. When the moment arrived, Brando gave the signal. The cameras began rolling. What happened next is something no one in the room will ever forget.

The *Hollywood Reporter* recounted the event this way: When the doors flung open, the 78-year-old Brando appeared wearing a blond wig, blue mascara, a black gown with an orange scarf and a bodice stuffed with gigantic falsies. Waving a single rose in one hand, he sashayed through the warehouse, plunked his 300-pound frame onto a throne-like chair on a makeshift stage and began fussily applying lipstick.

"I am furious! Furious!" Brando told the group in a matronly English accent, launching into an improvised monologue that ended, 10 minutes later, with the actor turning around, lifting his gown and mooning the crowd.

Over the course of the 10-day program, Brando had his audience observe improvisational scenes featuring Samoan

wrestlers and a troupe of little people, invited a homeless person off the street and tried to teach him the basics of acting, and asked his students to remove their clothes in full view of their classmates. Eventually, Brando's students were invited to perform a variety of improv exercises, which he offered to critique.

Brando was merciless in his feedback. When he didn't like what he saw, he didn't wait until a scene ended. He burst onstage and thundered his dismay, barking out, "Lies! Lies!"

Three days into the program, several students staged a walkout, declaring the seminar "a circus." The number of attendees continued to dwindle as the course progressed. Even the director quit.

What to Ask an Expert

It should come as no surprise that domain expertise and teaching performance do not go hand in hand. Doing and explaining are different skills.

When talking to experts, three categories of questions are worth considering: journey questions, process questions, and discovery questions. **Journey questions** are designed to achieve two objectives: unearth the experts' road map for success and remind them of their experience as a novice.

For example, "What did you read/watch/study to learn your craft?" "What mistakes did you make at the beginning?"

Process questions get at the nitty-gritty of execution. They're designed to illuminate the experts' approach by drilling down on the specific steps they apply to bring their work to life. For example, "What do you do first? What's next? And after that?" "Where do you get your ideas and strategies?" "How do you go about planning?"

Finally, **discovery questions** focus experts on their initial expectations and invite them to compare those naive beliefs with what they know today. For example, "What do you wish you had known when you first started?" "What factors turned out to be crucial to success that you weren't expecting?"

Those at the peak of their profession earned their standing by nurturing an insatiable hunger for new ideas, perspectives, and solutions. You get there by identifying concepts worth mastering, growing your arsenal of skills, and experimenting at the edge of your ability. Never before has that mindset been more pivotal than it is today.

The good news is that stimulating ideas are everywhere. We live in an age of unparalleled creative abundance. The ingredients are readily available. You now know how to unlock, master, and evolve them in new directions. It's time to see what you can do.

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Ron Friedman, Ph.D., is an award-winning psychologist who has served on the faculty of the University of Rochester, Nazareth College, and Hobart and William Smith Colleges, and has consulted for political leaders, nonprofits, and many of the world's most recognized brands. Popular accounts of his research have appeared on NPR and in major newspapers. He is the founder of ignite80, a learning and development company that translates research in neuroscience, human physiology, and behavioral economics into practical strategies that help working professionals become healthier, happier, and more productive.

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