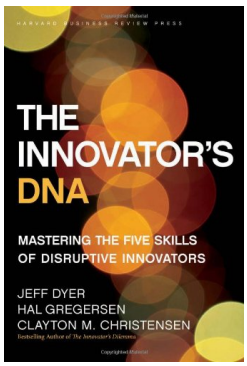


# The Innovator's DNA

Mastering the Five Skills of Disruptive Innovators

by Jeff Dyer, Hal Gregersen and Clayton M. Christensen

304 pages

## Focus

- **Leadership & Management**
- Strategy
- Sales & Marketing
- Finance
- Human Resources
- IT, Production & Logistics
- Small Business
- Economics & Politics
- Industries
- Global Business
- Career & Self-Development
- Concepts & Trends

## Take-Aways

- People can improve their innovation techniques, though creativity comes more easily to some than to others.
- Successful innovators use the five "discovery skills that compose the innovator's DNA."
- First, practice "associative thinking" by making connections among various ideas from disparate areas.
- Second, "ask questions"; be willing to look foolish.
- Third, "observe" what people do, how they do it and why.
- Fourth, "network" with people from a range of backgrounds.
- Fifth, "experiment"; take something apart, build models and try simulations.
- Innovative organizations hire, reward, retain and encourage innovative people.
- Such companies systematically follow "discovery processes," support questioning and experimentation, and invest in disruptive innovation.
- If you want your company to succeed at innovation, your top management team must demonstrate excellent creativity skills.

## Rating (10 is best)

| Overall | Applicability | Innovation | Style |
|---|---|---|---|
| **9** | **9** | **8** | **8** |

## Relevance

### What You Will Learn

In this summary, you will learn: 1) How to adopt the five core skills of innovation, 2) How to be more creative, and 3) How organizations' "people, processes and philosophies" shape their ability to innovate.

### Recommendation

Innovation gurus Jeff Dyer, Hal Gregersen and Clayton M. Christensen studied today's innovators and synthesized their findings into this immediately applicable handbook. They never oversimplify or suggest that innovation always succeeds, but they do indicate that the practices they identified in their research correlate with commercial achievement. *getAbstract* recommends their expert compilation to those who want to become more innovative, to business leaders seeking to revitalize their firms and to trainers who want to help learners think more creatively.

## Summary

### The Essence of Innovation

*"Highly innovative companies live by a set of key innovation philosophies that instill a deep, companywide commitment to innovation."*

Studying innovators reveals a pivotal lesson: While innovation comes more easily to some people than to others, innovation and creativity are not birthrights. Creativity is a learned skill. Since you generate innovation through your actions, you can learn to be more creative by focusing your time and efforts in that direction.

At the executive level, innovative entrepreneurial CEOs spend 50% more time engaged in "discovery activities" – such as experimentation – than entrepreneurs who do not innovate. Different stages in the life cycle of a business can contribute to this difference in emphasis: A start-up may need innovative thinking more than a mature firm. As an organization grows, its leaders may come to prefer the reliable delivery of known goods to the discovery of new ones, but innovation remains relevant to the growth of a company at any stage.

To enhance your ability to innovate and act creatively, use the same five "discovery skills" that compose the "DNA of disruptive innovators": "associating, questioning, observing, networking and experimenting." Associating – that is, connecting ideas from disparate arenas – is the most important; the other four skills "trigger associational thinking" and support creativity, which lead to innovative business ideas. Every innovator employs a different blend of these skills:

*"One's ability to generate innovative ideas is not merely a function of the mind, but also a function of behaviors."*

### Discovery Skill #1: Associating

Innovators combine elements of various ideas and practices that other people don't put together. They draw connections that cross boundaries, linking concepts from one discipline or culture with those from another. Albert Einstein called this process "combinatorial play" and saw it as foundational for creative thinking. Innovators make odd combinations by seeing a finer level of detail than most people and by stepping back to view the big picture.

Build the habit of associational thinking through training, travel and exposure. Indra Nooyi, chairman and CEO of PepsiCo, played sports (cricket) and music (rock guitar)

when she was young. She studied math, physics and chemistry as an undergraduate, and she earned an MBA and a master's of public and private management. She worked in the textile, consulting and energy industries. Her diverse résumé is the perfect foundation for an innovative mind-set. To build your associative skills, try "forced association," linking objects that don't logically fit together. Use metaphors to highlight associations. Assemble a "curiosity box" of random items and try to relate them to jump-start your creativity. Handle creativity-related problems with the "SCAMPER" method: "Substitute, combine, adapt, magnify, minimize, modify, put to other uses, eliminate, reverse and rearrange" the problem's elements as you seek a solution.

*"Innovators think differently (to be grammatically correct) but as Steve Jobs put it, they really just think different by connecting the unconnected."*

**Discovery Skill #2: Questioning**

Innovators ask questions. They challenge conventional wisdom by asking why the essential nature of something is what it is and what caused it to be that way. They follow up with why and why-not questions: Why can't we do this differently? Why isn't this feature available? Why has no one tried this before? Never worry about looking foolish. If you don't know something, ask.

*"General intelligence (at least the way scientists measure it) is basically a genetic endowment, but creativity is not. Nurture trumps nature as far as creativity goes."*

Consider Edwin Land. His three-year-old daughter asked him why the picture he'd taken of her wasn't available immediately. This led Land to wonder if developing photographs instantly was possible, a question that led to the invention of the Polaroid camera. Innovators ask hypothetical questions: What if *X* were true? Or they impose hypothetical constraints: What if we could not do *Y*? Such constraints drive creative solutions. To encourage team members to embark on a round of open-ended "QuestionStorming," ask what-if questions such as, What if price were no object? Ask better questions through conscious practice. Look for patterns or categories of inquiry. Try to identify obscure questions no one has asked.

**Discovery Skill #3: Observing**

Innovators examine everything. They pay attention to how things work, to what doesn't work and why. Innovators study how people solve problems. They find "common threads" in activities that may appear unconnected at first. Seeing a family crowded onto a scooter in the rain inspired Ratan Tata, chairman of India's Tata Group, to manufacture the Tata Nano. He used futuristic auto building methods to create a groundbreaking, inexpensive car. Tata sent out an investigative team to learn how and why people bought scooters, seeking information that would help the firm introduce its new car. Based on these observations, Tata extended its operations to include car financing, insurance and driving instruction to meet the demands of this target audience.

*"Innovators sometimes practice 'forced associating' or combining things that we would never naturally combine."*

When you are observing, closely watch how people perform a task to see if you could improve the process. Any job has "a functional, a social and an emotional dimension," but the role of each aspect varies from job to job. Notice how different people do the same job in different contexts. Try to spot individuals who have developed creative "workarounds" to solve problems. A workaround is often an innovative way to resolve a particular frustration. Also, pay close attention to the way people buy your product. Note what frustrates your customers about purchasing or using it, where they need help and what makes them abandon it in favor of a competing product. Heighten your powers of observation by changing your environment. Shift your focus: Watch workers, then customers, then entire organizations. Enhance your observational skills by documenting the how and why of failed innovations.

*"Innovators constantly question common wisdom."*

### Discovery Skill #4: Networking

*"Most innovators are intense observers. They carefully watch the world around them, and as they observe how things work, they often become sensitized to what doesn't work."*

Many people network to advance their own careers or to increase their productivity. Innovators network for other reasons. Rather than targeting people like themselves and trying to reach them with tried and true methods, innovators network to learn new information and to draw lessons from other fields. Innovators make a point of meeting people whose lives and training provide new and different perspectives. This is one way to "build a bridge into a different area of knowledge." Innovators look at different disciplines that solved similar problems and borrow from their ideas.

Travel builds bridges to multiple perspectives; living abroad builds even more. Many innovators seek forums or events that promote interdisciplinary discussion and creativity, like the Technology Entertainment and Design (TED) conferences. These gatherings bring experts and interested thinkers together to address topics that intersect with several of the forum's broad, complex fields. Attend a conference outside your field, or join a networking group for innovation. Eat lunch with new people, or invite outsiders to join your group to add new perspectives.

### Discovery Skill #5: Experimenting

*"If you ask salient questions, observe salient situations and talk to more diverse people, you will likely need to run fewer experiments."*

When you say "experiment," people imagine scientists in labs. But innovators use the entire world as their laboratory. They repeatedly test, develop and rework ideas, which is essential to bringing innovations to fruition. Experimentation is rarely the start of innovation. More often, innovators observe a possibility or ask questions about why some process or device functions as it does, and then they experiment to test it. For example, in 1994 Jeff Bezos spent time considering the rapid growth of the Internet – 2,300% annually at that time. He followed up with questions about what sort of business would make best use of the Internet's exploding commercial potential. Once he started Amazon, Bezos experimented with new ways to sell innovative products, such as the Kindle. This was a natural extension of his lifelong habits. As a child, he tried to take apart his crib. As he got older, he built toys and helped his grandfather with repairs at his family's ranch.

*"Discovery-driven leaders need the delivery-driven skills of people who excel at execution."*

Innovators can experiment in at least three ways: They can seek new experiences, like taking a class on an unfamiliar topic; they can take things apart to see if they can improve them, as Michael Dell did when he got his first computer; or they can build prototypes or models to test new ideas. People who conduct such experiments share a similar mind-set. Rather than embarking on experiments designed to reach a specific goal or outcome, they use open-ended testing and pursue its outcomes to see what else they can learn.

Experimentation is closely linked to the other discovery skills of innovation. If you ask more and better questions, pay close attention, and consult people from different fields, you will require fewer experiments to develop your product. To improve experimentation, cross the usual borders, both literally – through travel – and metaphorically – by exploring a new discipline or topic. Learn new skills. Build models and try simulations. Blend experimentation with observation by trying to spot new trends.

*"Thinking outside the box often requires linking the ideas in your area of knowledge with those of others who play in different boxes, who are outside your sphere."*

### Innovative Organizations

"People, processes and philosophies" define innovative organizations. These three factors fit together in a "3P framework," where each element supports and shapes the others:

1. **People** – For your firm to do well at innovation, your leading executives must be skilled in creativity, and provide a model of creative, "discovery-driven" behavior and hire like-minded people. These leaders are aware of the skills they have and

*"The DNA of innovative organizations mirrors the DNA of innovative individuals."*

the skills they lack. For example, eBay founder Pierre Omidyar knew he was stronger at discovery than at execution, so he brought Stanford MBA Jeff Skoll into the firm for balance. Innovative firms assemble teams with "complementary discovery skills" – for example, pairing an insightful observer with a talented experimenter. Team skill requirements vary according to the team's stage in the innovation process: Some growth phases emphasize discovery, while others focus on delivery and implementation. The design firm IDEO hires people whose knowledge is "T-shaped" – deep in one area and extending across a broad range. When IDEO evaluates innovations, it brings three realms of expertise to bear: business, to evaluate markets and profits; technological, to evaluate feasibility; and professional, to provide knowledge-based services.

2. **Processes** – Innovative organizations are systematic about developing and following discovery processes. Organizational discovery procedures generally mirror the steps individuals take: groups observe, question, associate, and so on. This often starts with the leader's behavior. For instance, Steve Jobs repeatedly asked why and what-if questions and led others at Apple to do the same. Innovative organizations systematically seek people who have already developed new discoveries and are eager to continue to innovate. Virgin and Google both explicitly recruit people who think differently, and both require job applicants to display creativity. Innovative organizations extend their discovery processes to an institutional level. For example, rather than just hoping that their employees network, Google and Procter & Gamble swapped staff members for a few weeks so they could see how the other company worked and also experience each other's processes. Some firms have contests or tournaments in which people outside the organization submit or build ideas, sometimes in response to specific challenges. Innovative companies provide materials, time and funding for prototyping.

*"Innovative ideas flourish at the intersection of diverse experience, whether it be others' or our own."*

3. **Philosophies** – Forward-looking firms believe "innovation is everyone's job." While most companies focus on incremental change, these firms invest heavily in "disruptive innovation." They set up project teams that mobilize a range of talents and training to strike out in new directions. And they understand the importance of taking the "smart risks" that lead to innovative discoveries. Innovative firms communicate the necessity of innovation throughout their organizations by actions, reward systems and educational campaigns. Innovative leaders encourage people to experiment and give staffers a "safe space" to explore ideas. They probe for questions, praise employees for using discovery skills and provide time for people to innovate. Google's policy of allowing employees to spend 20% of their time on their own projects is a well-known example of this policy.

*"Innovative companies are almost always led by innovative leaders."*

The innovation process can be scary. You set out to disrupt the status quo with no guarantee that you'll get the results you want. But the benefits of innovation are undeniable. Start today by assessing whether your discovery skills are strong or weak. Then, "identify a compelling innovation challenge that matters." Practice your skills and find a coach to support your efforts. Develop your creative abilities by helping others develop theirs.

*"Clearly, the process of creative discovery can be difficult, but the rewards far outstrip the challenges."*

## About the Authors

**Jeff Dyer** teaches strategy at Brigham Young University. **Hal Gregersen** teaches leadership at INSEAD and consults on innovation. **Clayton M. Christensen** teaches at Harvard Business School and has published widely on innovation.