

Web link: <http://knowledge.insead.edu/innovation-innovators-dna-091221.cfm>

The innovator's DNA

A major new study involving some 3,500 executives has highlighted the key skills that innovative and creative entrepreneurs need to develop. The six-year-long research into disruptive innovation by INSEAD professor [Hal Gregersen](#), Jeffrey Dyer of Brigham Young University and Clayton Christensen of Harvard, outlines five 'discovery' skills you need. But, says Gregersen, you don't have to be 'great in everything.'



Hal Gregersen

Some well-known business leaders such as Apple's Steve Jobs and Amazon's Jeff Bezos rely on their own particular strengths since innovative entrepreneurs rarely excel at all five discovery skills. For example, Scott Cook of Intuit is strong in observational skills. Marc Benioff, founder of Salesforce.com, does a lot of networking, he says. As for Bezos, "experimentation was his forte," while Jobs is "incredibly strong at associating."

The five skills, Gregersen says, are 'a habit, a practice, a way of life' for innovators. Although Gregersen and his co-authors use the DNA metaphor, innovative entrepreneurs are actually made or developed, rather than born. "We each have unique, fixed physical DNA," says Gregersen, "but in terms of creativity, we each have a unique set of learnable skills that we rely on in order to get to the ideas that will give us some insight."

Research involving identical twins suggests that only about 20-25 per cent of our creativity ability is genetically driven. "This means the other 75-80 per cent comes from the world we live in," Gregersen says. "So even if I took those identical twins and you have one twin who sits at home, watches the television, doesn't do a whole lot trying to generate a new business idea, and you've got a second twin who talks to 10 different people from 10 different diverse perspectives, who goes out and maybe observes the world systematically, takes notes and pictures, writes down in a journal things that he or she sees, constantly asking questions -- 'What if? Why not? How could? What might? How might? Those sorts of things. Which of those identical twins is likely to get the creative ideas?'"



"It's the one out there doing the creative actions," Gregersen says. "They might get a bit of a boost from genetics but that's not the core of what delivers the results."

The five key discovery skills

Associating

Creative entrepreneurs ‘connect the dots’ to make unexpected connections. They combine pieces of what may seem disparate pieces of information until “surprise - you've got this innovative new idea.” Steve Jobs, the CEO of Apple, was interested in calligraphy and this eventually led to his company producing user-friendly, graphics-based Macs. “Several years later, when Jobs was trying to figure out the Macintosh screen, and the 'what you see is what you get' (WYSIWG) sort of image, he connected the dots back to what he had learnt in calligraphy to what might be on the screen and it was a key component of making that whole computer work.”

Observing

Some of the most innovative entrepreneurs are “intense observers,” Gregersen says. Take for example Scott Cook, the founder of Intuit: “When we interviewed him, we talked about how he got the initial idea for Quicken software. He watched really carefully in terms of how his wife was very frustrated doing their finances. Manually it was frustrating and irritating. She purchased some software that was equally frustrating and irritating.” It was at that point that Cook thought he might be able to develop a product that could help his wife “solve that problem more effectively.”

After a ‘sneak preview’ of an early Apple computer, Cook got a “rich sense of what it might look like to have a user interface and a mouse and so on, and be able to have things like checks on the screen that looked like what they should be.” And from this observation, Gregersen says, sprang Quicken.

Experimenting

When Jeff Bezos, the founder of internet retailer Amazon, was growing up, he used to spend time on his grandfather's farm in the summer. When machinery broke down on the farm, his grandfather would try to fix it himself, with some help from Jeff. They would “experiment, trying this and that, until it would finally work again.” If the animals on the farm got sick, his grandparents wouldn't call the vet, but rather experiment and try to fix the problem themselves.

“So Jeff grew up with that kind of attitude and mindset, that if I am confronted with a challenge, I can figure out a solution,” Gregersen says. “That kind of experimentation spilled over into Amazon.” At first, the idea had been to sell books via the internet without inventory. “That was the initial idea. We sometimes forget that it took him seven, eight, nine years of experimentation to build the capacity to have warehouses full of books.” As a consequence of his experimentation, Bezos “built this business model that we now call Amazon today.”

Questioning

Questions are at the core of what we do. We can be observing the world or experimenting, “but if I have no questions in my mind, I'm pretty unlikely to get any observations or insights or ‘ahas’ that I never saw or thought about,” Gregersen says.

“And this kind of questioning attitude and mentality is just rampant in these folks.” Some may be better than others in observing, but when it comes to questioning, “all were powerful.”

“I'll never forget when I sat down with A.G. Lafley (the former CEO of Procter & Gamble) to talk with him about his world of leadership. I had a series of questions related to research about global leadership and I swear he asked me far more questions in that interview than I asked him because he was just simply curious about what was going on in the research.”

Another was Michael Dell. "I had the naivete to ask Michael if he had any favourite questions he likes to ask when he wanders around the world. And he instantly responded with a quizzical look, like 'That's a dumb question.' Then he said : "Hal if I had some favourite questions, everybody would know the answers. Instead, when I'm wandering the world, I try to construct a question for every conversation that might generate information that I never had before'. And for most of these innovative entrepreneurs, that's just how they think."

Networking

Typically, when we think of networking, we think of this in terms of jobs, a career or maybe social life. But when it comes to creativity, it takes on a different meaning. "Innovators are intentional about finding diverse people who are just the opposites of who they are, that they talk to, to get ideas that seriously challenge their own," Gregersen says. Creative and innovative entrepreneurs look for people who are "completely different in terms of perspective" and regularly discuss ideas and options with them "to get divergent viewpoints." There could be differences in gender, industry, age, country of origin, or even politics. "If I'm on the right, they're on the left, that kind of notion. And those sorts of diverse inputs in terms of conversations enabled them to get new ideas," he says.

"Now it doesn't come instantly. Sometimes the conversations provide their own insights." David Neeleman, founder of JetBlue Airways and now CEO of Azul Airlines in Brazil, got the idea for paperless ticketing or e-ticketing, Gregersen says, by talking to one of his employees about the frustration of having to carry around paper tickets in order to give them to passengers flying on their planes. "So that conversation then led to a new idea and a way of doing things differently."

Disruptive innovation

Another of the co-authors of the study, Clayton Christensen, is an expert in disruptive innovation and this led Gregersen to wonder what the origin was of "those disruptive organisations that changed whole industries." They then drew up a list of the world's most innovative companies based in part on BusinessWeek's "Most Innovative Company" ranking and began interviewing the CEOs or founders.

They got access to the likes of Dell, asking him and others: "Tell us about what was going on when you got the initial idea that led to this innovative business called Dell computer (or Amazon in the case of Bezos)." They then realised, when looking at the responses to this question, that innovative entrepreneurs are "doing a lot of the same things -- there's a little bit of variation but a lot of the same things."

At that stage, they developed a self assessment and 360 degree survey based on the concepts of experimenting and so on, and assessed 'thousands of executives and entrepreneurs.' "And what we discovered was that those engaging in these behaviours and this thinking pattern, were actually the ones who delivered breakthrough processes, new products and services, new business lines within companies, corporate entrepreneurship, and new businesses outside of companies -- all of which were financially profitable and successful."

"At the core of this, all these folks were driven by a fundamental bias against the status quo. They were absolutely uncomfortable with things being the way they are. They wanted to make things change ... They wanted to change the world. And they're going to risk failure in order to make that a reality."

Corporate decision-making, he says, does "not usually value or support innovative actions." Yet, some companies do. P&G's marketers, for example, spend more than 12 hours on average each month just observing customers. "They value the behaviour and they get the innovative results. So one of the surprises for me is that even though these are relatively straightforward things that we

could do, most of us have lost the capability to do them.”

Practising and developing the skills



Gregersen says the five discovery skills may seem ‘intuitive’ but when it comes to the actual practice, “doing them is counterintuitive.” That’s because the adult world in which we live “does not value these actions.”

Gregersen’s advice? Start acting like a child again: “Not 100 per cent of the time, that would be absurd. We’re adults and we have to run businesses. But 20 per cent, 25 per cent of our time, act like a four-year-old again,” Gregersen told INSEAD Knowledge. “Because all these skills are what four-year-olds do. They ask thousands of questions: ‘Why?’ ‘Why not?’ This and that. They’re always asking those questions ... They observe intensely and they’ll talk to just about anybody.”

“These are the things that we all did as four-year-olds. We all did this stuff. And if we happened to attend a Montessori-type school like many innovative entrepreneurs did, then we still might be doing this stuff. But most school and corporate systems consistently say: ‘Don’t do it, stop doing it’ ... and we lose our innate creative capacity.”

But this ability is not lost forever. “We can get it back and that’s where, if I want to become better at questioning, I start asking more questions.”

His suggestion is to get a journal and, if you’ve got a problem, take a few minutes each day to write down questions about that problem. After a month or so, “your questions will change and it’s by changing the question that we change our fundamental understanding about the problem that leads us to a solution that we never thought of before.”

Take notes when observing others. “Step back from (the problem or situation), talk to people: ‘What did you learn? What surprised you? What was interesting?’ If you like to talk to people, talk to somebody different: maybe on another floor, a different building, a different office, another country, but talk to somebody who’s 180 degrees different from you. These are things that we can do and they don’t take a lot of time to do them.”

“Innovation is a habit,” Gregersen says. “And for these innovative entrepreneurs it’s a way of life. It’s the fabric of who they are. And for others who aren’t that way, they could be: if they choose to act different to think different.”

You can find more about the ‘Innovator’s DNA’ in the December edition of the [Harvard Business Review](#).

Hal Gregersen is an affiliate professor of leadership at INSEAD. The co-authors of the study are Jeffrey Dyer, a strategy professor at Brigham Young University, and Clayton Christensen, a professor of business administration at Harvard.

First published: December 21, 2009

Last updated: January 14, 2010

