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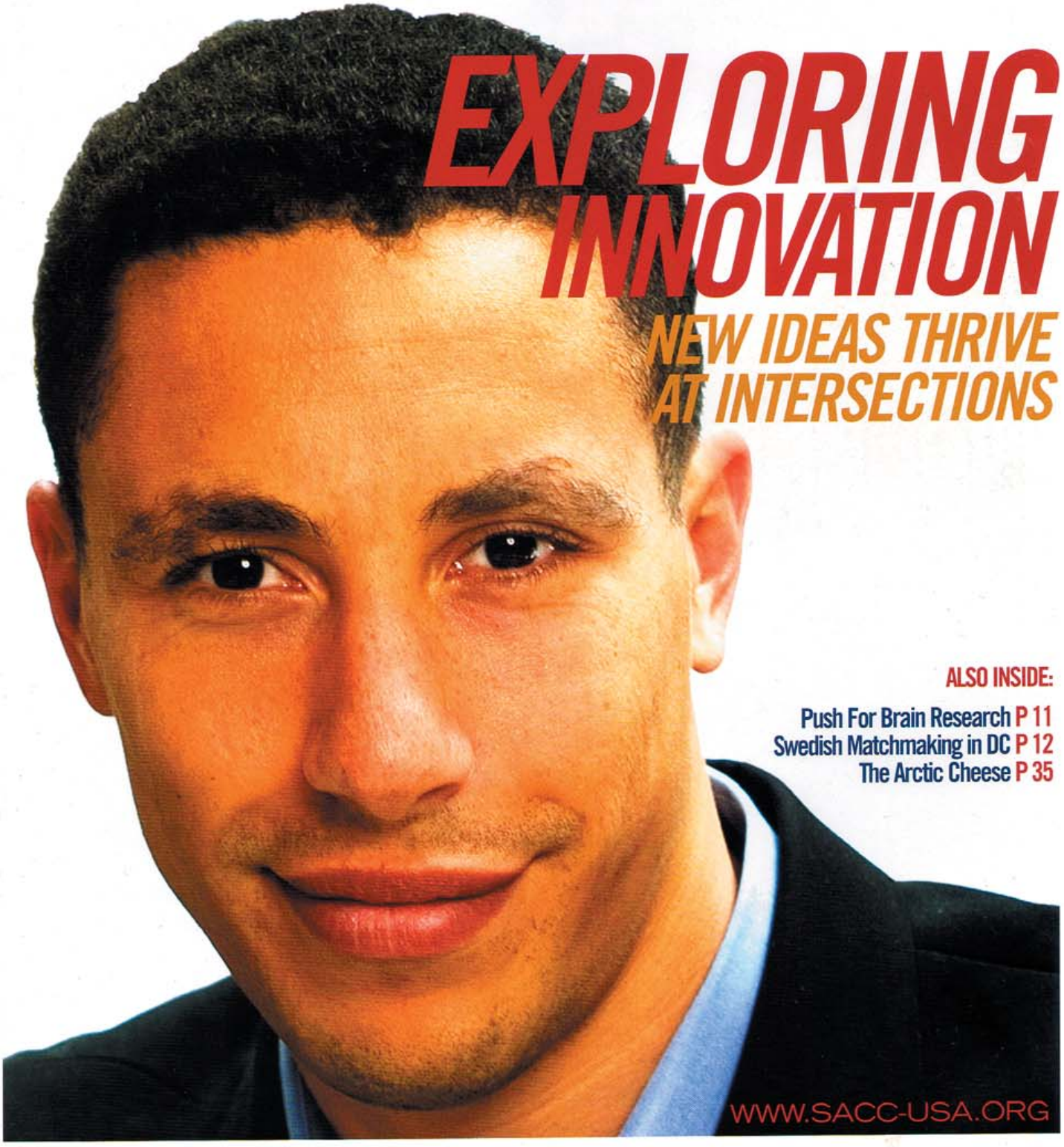

EXPLORING INNOVATION

NEW IDEAS THRIVE AT INTERSECTIONS

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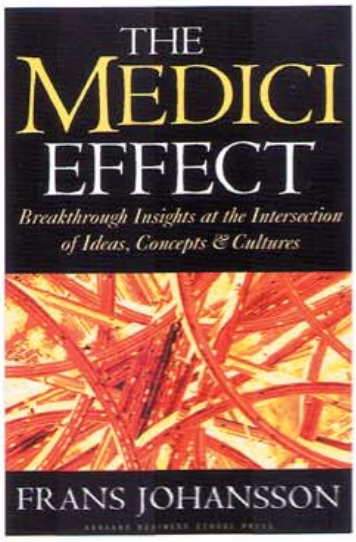
STORY AND PHOTO BY HANS SANDBERG

THE PLACE WHERE NEW HAPPENS

The Medici Effect is a book about innovation in an era where many discoveries happen in between or outside the lines of established fields. Frans Johansson calls these places of discovery "intersections," and wrote his book to teach us how to recognize, analyze, and use them. The Harvard Business School Press published the work, and soon Johansson found an audience, including CEOs of companies like GM, Kodak, and Lockheed Martin.



Johansson protests when I half-jokingly suggest that he's becoming a guru. He doesn't like the word, but his calendar tells its own story as he finds himself traveling around the world, giving keynote speeches at trade shows, and talking to top management. His message is clear and very timely: it's about the benefits of diversity, stepping out of the circle, and daring to explore and be different.

Johansson speaks Swedish with a Gothenburg accent and has a very traditional name, but his look hardly fits that of the stereotypical Swede. (This look is,

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THE MEDICI EFFECT

STORY AND PHOTO BY HANS SANDBERG

Frans Johansson in Manhattan

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however, not quite as typical as foreigners think, as one million Swedes have at least one immigrant parent.) His mother is of Afro-American and Cherokee descent, and his father is a native of Gothenburg, where he was a tentmaker, as his own father was.

But Frans Johansson's father's real passion was sportfishing, which led him to start the sportfishing magazine *Fiskejournalen*. It was on a fishing trip to Mannheim in Germany that his father met an English teacher who worked at a nearby U.S. military base. The couple settled in Gothenburg, where they had Frans. Frans grew up in Gothenburg, but left Sweden to attend Brown University, where he started a cross-discipline magazine. He was thinking of pursuing a Ph.D., but felt the call of entrepreneurship, which brought him to Baltimore where an aunt was a medical researcher at Johns Hopkins University. He and his cousin Christian started a company in her basement and developed and patented an instrument that nurses use to measure a patient's pain. By then they were 22 years old.

"I loved starting companies, I really loved it, but my passion was definitively not in the healthcare business, so I applied to Harvard Business School instead," Johansson says. His cousin soon followed him, but within a year they left Harvard to found a software company called Inka. This was during the peak of the Internet boom. It was easy to find financing, and they soon had 30 employees while working for clients like Intel and Lotus. But the boom turned out to be a bubble, bursting in March of 2001.

Frans Johansson found himself with extra time on his hands. He recalls, "I woke up one morning and had this idea that you discover new things when you combine disciplines and cultures. But was it really so? It seemed so, intuitively, but was it really true? And if so, exactly why was that the case? Finally, what does this mean if you want to apply these ideas in real life? What is the difference between innovating within a field compared to doing it at an intersection? Of course, you could say that I had been working toward this all my life. I realized when I grew up that I was different from most people around me. It wasn't only the link between Sweden and the U.S., but also the issue of black and white. There were plenty of combinations here."

The Medici Effect is about innovations, but not the gradual stuff, which the author calls directional innovation. He is more interested in breakthroughs, such as Charles Darwin replacing of the Biblical creation myth with a scientific explanation. Or Mike Oldfield blending rock and classical music, Håkan Lans developing groundbreaking products, or chef Marcus Samuelsson creating bold new riffs on Swedish food that didn't make sense until he did it. They all had found themselves at intersections abounding with opportunities, and they didn't hesitate to grab them.

When people step into an intersection, they need to let go of many of their perceptions and prejudices, claims Johansson. But, he adds, that doesn't mean that you can do without knowledge and expertise: "When you take a Swedish idea abroad, you are letting it intersect with something else, and that's where you can find success. That's what made it possible for Swedish music to conquer many parts of the world, and that's what Marcus Samuelsson did when he turned Aquavit into a leading restaurant."

However, not everybody loves intersections: Many people shun them, as is the case with fundamentalist Christians in the U.S. and fundamentalist Moslems in Iran or Saudi Arabia. These people prefer interpretations of holy texts to exploring intersections with other cultures and ideas.

"Well, it's a choice to be made either as a person, a company, or a society," Johansson says. "If you choose to not break new ground or innovate, you may be able to push what you know, but sooner or later, you'll stagnate. The world is moving fast, and if you don't look for intersections, somebody else will. It's inevitable. The question is not whether it will be done, but by whom." ■

CHAPTER 7: IGNITE AN EXPLOSION OF IDEAS

Submarines and Tubular Bells

IT WAS A CALM evening in the summer of 1982. The prolific inventor and engineer Håkan Lans and his wife, Inga, had been sailing through the Stockholm archipelago for the past couple of days, enjoying an unusual spell of beautiful weather. Toward the late afternoon they hooked up to a small island and Lans decided to go for a quiet walk. He climbed to the top of the island and sat down to relax.

Until this sailing excursion, Lans's mind had been occupied with a particularly complex issue. About a year or so earlier he had learned about the U.S. military's new Global Positioning System (GPS), a constellation of satellites deployed to aid armed forces in navigation and position location. Today GPS supports a wide range of commercial uses-from tracking stolen cars to tracking one's own kids–but at the time it was entirely new.

Lans realized, even back then, that the GPS network of satellites could be used differently, as part of a much larger technology that would make airplanes and ships safer to navigate. He envisioned a system where every single airplane could coordinate with all others, rather than relying on the expensive and accident-prone system of radar-manned towers. The system he imagined would save billions of dollars, save lives, and also free up space in increasingly congested airways.

The only problem: It was not possible to execute his vision. Lans faced what seemed like an insurmountable physical limitation. In order to make this idea a reality, all airplanes would have to broadcast their positions to other close aircraft virtually at the same time. The current technology to make that happen, TDMA (Time Division Multiple Access), was woefully inadequate. Perhaps the best way to understand the limits of TDMA is to imagine thousands of people yelling out their position at the same time. It would be impossible to hear what some people said because their voices would be crowded out by other voices, like the early-morning chatter between animals in a rainforest. Hence the system would be useless.

On this island top, so far away from computers and technology, the question of his navigational system suddenly came into focus. Looking over the glittering sea, he had an idea. What if an airplane could broadcast its position only when it was approaching another airplane? After all, wasn't that the only time a collision was possible? Wouldn't that free up some airtime, allowing planes to communicate in a more orderly way? Maybe it would, he thought. Maybe it could. . . .

The way Lans describes the moment, his breathing slowed and the world around him seemed to stop. He started to tremble as one association hooked onto another and an entire vision of related ideas and inventions unrolled before his inner eye. Lans stood up and ran back down to the sailboat. He needed to get back to work.

The Relationship Between Quantity and Quality of Ideas

Is there such a thing as a defining characteristic for successful innovators? Is there one thing that, more than any other, holds true for people who develop groundbreaking ideas? Actually there is, and it is this: The most successful innovators produce and realize an incredible number of ideas.

The strongest correlation for quality of ideas is, in fact, quantity of ideas. A closer look at the number of new products, songs, books, scientific papers, strategy concepts, ideas–any category, anywhere–reveals that they are not evenly distributed. In any given field of creative activity, it is typical to find that around 10 percent of the creators are responsible for 50

Why are some innovators so productive? And what, if anything, does that have to do with the Intersection? This chapter will answer both of these questions because they are critical to understanding why the Intersection is so powerful in creating the Medici Effect."

percent of all the contributions.Some individuals or creative teams will come up with ten, a hundred, or even a thousand times more ideas than their peers. Not only that, those who have created the most are also the ones who have the most significant innovative impact. This was true in the past; Pablo Picasso, for instance, produced 20,000 pieces of art; Einstein wrote more than 240 papers; Bach wrote a cantata every week; Thomas Edison filed a record 1,039 patents. This holds true today. Prince is said to have over 1,000 songs stored in his secret "vault," and Richard Branson has started 250 companies.

Consider an author like Joyce Carol Oates, one of the usual suspects for the Nobel Prize in literature. She published her first novel in 1964 and, almost four decades later, had published a total of forty-five novels, thirty-nine story collections, eight poetry collections, five dramas, and nine essay collections and contributed to sixteen anthologies.She writes stories the way some of us sign greeting cards. This is the kind of person who innovates.

Why are some innovators so productive? And what, if anything, does that have to do with the Intersection? This chapter will answer both of these questions because they are critical to understanding why the Intersection is so powerful in creating the Medici Effect. The bottom line is this: The intersection of fields, cultures, and disciplines generates combinations of different ideas, yes; but it also generates a massive number of those combinations. People at the Intersection, then, can pursue more ideas in search of the right ones.

Virtually every person or team I've met while learning about the intersection emphasized the need to try many ideas in order to generate something groundbreaking. Perhaps no one exemplifies this better than Håkan Lans. Although you've probably never heard of him, he is one of the most prolific and successful innovators of our time.

The Producer of Ideas

The first thing that struck me about Lans was an appearance of modesty. He lives unassumingly, well below his means, in a nice but not extravagant house, and he drives a nice but not extravagant car. He doesn't seek out the limelight, but he is clearly not shy. Once he gets going, Lans can talk for hours about virtually anything.

The second thing that struck me was that Lans is different from most people described in this book in that he grew up and lived mostly in one place his entire life, around the city of Stockholm. Lans has broken down his associative barriers by learning differently; he is self-taught in virtually every discipline of technology and engineering. Lans is also adept at finding intersections between many of those fields; this, he will tell you, is the reason for his success. Today he is one of the most well regarded scientists in Sweden, even without a formal Ph.D. What is his secret? How did he end up here?

Modest living aside, his life has some of the trappings of a good spy novel, including international espionage, high-stakes courtroom battles, and patent thefts. He single-handedly took companies such as Hitachi to task for copyright infringements and challenged world bodies such as the United Nations and the European Union. But he also produced ideas and innovations at a prolific pace.

His most significant innovation is probably the development of the navigation system called STDMA (Self-organizing Time Division Multiple Access). That flash-in-the-sky insight Lans had on the island ultimately launched an incredibly ambitious project that took him

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