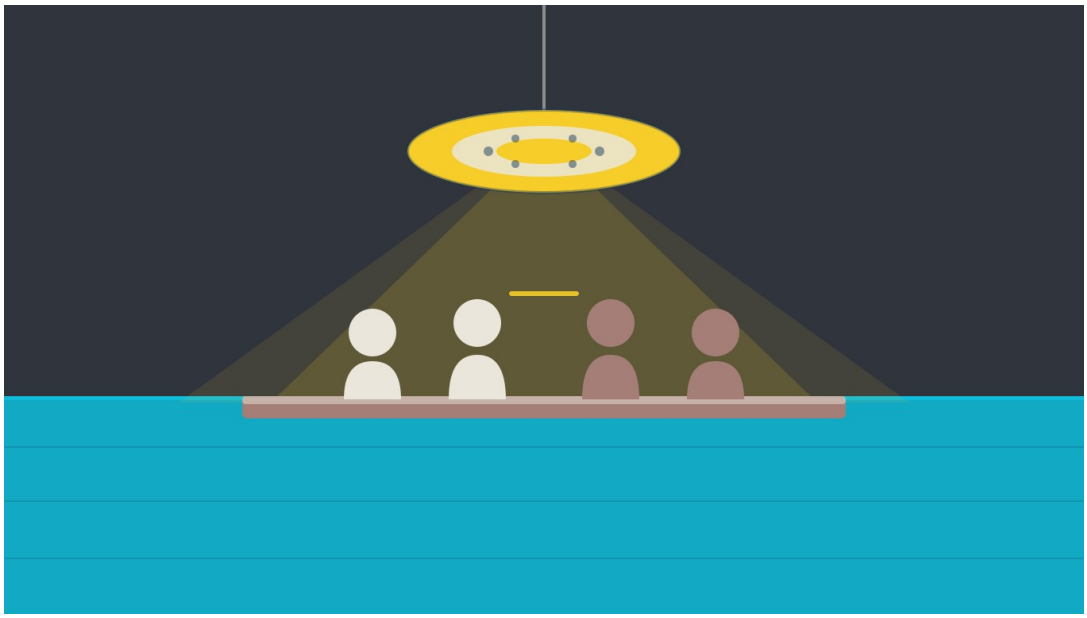
HEALTH & SCIENCE / TECHNOLOGY

When Innovation Comes From the Trenches

To be a lead user, you do not need to be a visionary. You need to face a need before the rest of the market does, and solve it because no one else is able to solve it yet.



Editorial illustration. AI-assisted, art-directed in the RC STEM palette.

By Rosario “Charo” Cestau

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3M’s major breakthrough in infection control did not come out of a laboratory. It came from a hospital in Indonesia. In September 1996, Rita Shor, a chemist working in the surgical division of 3M, a leading medical-supply company, had to find a product in surgical supplies that could be truly innovative. She attended an internal talk on the lead user methodology, where she met Mary Sonnack, who also worked at the company and had just returned from a year-long stay at MIT’s Sloan School of Business. There she had trained with Eric von Hippel, a world authority on user innovation.

There was no time to lose. The company was under heavy pressure to produce something genuinely new. They were talking to surgeons and other specialists, but the innovation was not coming. To win their bosses’ approval, they began collaborating with the wider team to generate the kind of innovation that would help surgeons avoid infections. Soon they realized this innovation was not going to come from local hospitals. The best place to see it, against all intuition, was in the trenches. And so teams from 3M traveled to hospitals in Indonesia, Malaysia,

Korea, and India. There they observed what some surgeons in these remote hospitals were doing to contain infections.

That is how they gathered ideas that soon took hold in practice, leading to three new product lines, a new infection-control strategy, and, in time, a discovery center dedicated to the topic. This was not traditional market research. They could see that it worked precisely because these users were lead users. We are not talking about the fast adopters, also known as “early adopters” in innovation jargon. To be a lead user you do not need to be a visionary. You need to face a need before the rest of the market does, and solve it because no one else is able to solve it yet. You notice the gap, and most of the time you are willing to work with companies so that many others can benefit. For anyone who grew up in the 1980s, it is like being a MacGyver, the TV character who solved any problem with the steady pragmatism of an engineer.

Thirty years later, in a room in Boston, that same logic reappeared on the other side of the table. This past April, I was invited to attend the meeting of Intelligence Ventures (IV), a US-based venture capital firm that invests in startups focused on the use of artificial intelligence in health. The gathering brought together startup founders, investors, and even academics weighing the jump into industry. Doug Nissinoff, its founder, presented a report in which he and his team analyzed more than 600 companies that had applied for investment, mapping trends at the intersection of artificial intelligence and life sciences. The firm was founded in 2023 and has already funded four startups, with another fifteen in final-stage evaluation.

One of the central findings of the Intelligence Ventures report is that, beyond access to capital, one of the biggest barriers facing startups in the bio space is securing access to data to train and validate models. Another striking aspect of the conference had to do with the profile of the members of its executive investment committee, the limited partners, or LPs. This committee of twenty LPs includes three biotech executives who have just launched their own startup, along with two surgeons and a nurse. The remaining members include pharma and medtech executives, a Google director, and even a patient. She lives with a chronic illness, and recounts that she grew tired of the system, to the point of deciding to put her own money to work to fix it. The majority, then, are scientists, health professionals, or people who lived the problem up close before financing it. They have walked in the shoes of the person asking for funding, and they know what unblocks that road because they have already traveled it.

Three of them led a question-and-answer panel moderated by Doug. But the answers to questions such as the role of artificial intelligence as the backbone of these startups did not include the words “risk” or “return.” They spoke instead of its role in recruitment for clinical trials, or in accelerating research and development, with the fluency of a scientist.

They are like lead users, but for investment. A kind of lead-user investor. Each month, the LPs evaluate and vote on the applications. The final decision rests with

Nissinoff, but it is unquestionably shaped by the perspective of those who have already traveled that road.

The innovation 3M generated from the lead user led to a new discovery center focused on infections. That focus on infections, a central issue for Latin America and other emerging economies, was a side effect of the methodology created by Professor von Hippel. In the case of IV and firms like it, only time will tell whether lead-user investors manage to help founders overcome not only the barrier of capital, but the barrier of data access.

Thirty years ago, the 3M teams had to travel to Indonesia to find what the center could not see. Today, the data that would advance diagnosis sits in hospitals and registries across Latin America. The question is not whether it is there. It is whether the investors who write the checks have walked its corridors, and even talked with the people who walk them.