

From scratch

How a group of young and academic engineers created a global core analysis company

“NO DATA, no problems,” laughs Tanguy Lomme from Epslog when he reminisces on his years at Shell when he worked as a reservoir engineer. As soon as he joined founder and CEO Christophe Germy to become part of the Epslog team in 2013, his perspective on that mantra changed quite dramatically.

All of a sudden, Tanguy turned into an advocate of bringing high quality core data into the reservoir modelling workflow. But it wasn't too difficult for him: “I knew very well what company I had joined,” he says.

Tanguy and Christophe had known each other for quite a few years already, going back to the mid 1990's when they both spent some time at the University of Minnesota, under the wings of Professor Emmanuel Detournay.

And with Emmanuel the story of how Epslog evolved starts, as his work stands at the very basis of what the guys from Liège in Belgium are doing now with their Core DNA product: Offering a wide range of continuous core analyses through scratching and scanning the rocks. But at the time, in the 1990's, it wasn't a core analysis device that Emmanuel had in mind. For him, it had a totally different purpose.

BETTER UNDERSTANDING BITS

What can be called the first core scratch test device was not a machine that was developed to test core: It was a device that was to test a single cutter of a PDC drill bit using a material that was as close to a formation as possible. Core seemed a logical candidate for that.

“What Emmanuel did is to use the outcomes of the tests to see how he could better understand PDC drill bits to ultimately overcome unwanted

behaviour such as stick-slip vibrations and bit bouncing,” Christophe says. “We all came from an engineering background, and it was the tools rather than the geology that interested us.” Christophe studied engineering in physics specialized in space tech-nics.

But as the scratch test device was further developed at the University of Minnesota, Emmanuel realized that the data they produced were also of use to geomechanical specialists, as one of the outputs was the uni-axial compressive strength. This resulted in him receiving sponsorship money, and some companies acquired a machine too.

“The advantage of the scratch test is that it is much less destructive than crushing a core plug, which is another way to determine the uni-axial compressive strength,” explains Christophe, “and it measured the parameter across the entire length of the core rather than at a single point.”

“NEXT TIME IT'S WHITE POWDER”

The first step in the students' business venture was to get a scratch test device from the US to Europe. “Emmanuel sent us to the Netherlands to deliver, install, and train people to use the first machine in Shell,” recounts Tanguy. It was the very same machine that he himself had been using for his master's research project.

It became trip to remember.

“Me and a fellow student, Thomas Richard (another founder of Epslog), arrived at customs in Amsterdam with the machine in our hand luggage, and were ready to walk through the “Nothing to Declare” lane, until we got asked to undergo an inspection,” says Tanguy. “Now you're travelling with this,” the customs agent

said, “but next time it will be with white powder.”

“It got us into a bit of trouble and in the end someone from Shell had to come over to Schiphol and make a payment in cash,” Tanguy laughs. “It beautifully illustrates how oblivious we were about the world beyond our lab and of very basic things such as customs.”

And whilst Tanguy and Thomas were waiting in the customs clearing room, Thomas was still finishing the coding of the software that came with the device. “It was a surreal experience to have our first contact with the industry this way. But despite the trouble that the first shipment brought, it was the start of a collaboration that lasts until today. There was the tension of us not really fitting in, but yet delivering to satisfaction,” concludes Tanguy.

The product was subsequently patented, but a US-based company acquired the rights and started marketing the service without further involving the university. At that point, it might just as well have been the end of the game for the young French and Belgian guys working with Emmanuel in the USA.

But it wasn't.

DOWN UNDER

It was in Australia in the early 2000's, when Christophe was carrying out his PhD on drill bit mechanics with Emmanuel Detournay, who was part time conducting research in CSIRO, that he overheard a conversation between Thomas and Emmanuel saying that they were keen to establish a new company based on the scratch test principle. This time it would be for the market outside the US, where a patent prevented them from competing.



Team photo with clients from Petrobras during commissioning of their newly acquired CoreDNA system. Front: Christophe Germy. Back from left: Julien Monseur, Thomas Mazur, Bastien Pinchard, Geoffrey Trine, Luc Perneder, Anselmo Machado Borba (Petrobras), Rodrigo Davila da Silva (Petrobras). Bottom left: Tanguy Lhomme and Samuel Cheniaux.

It became Epslog. “The only ones we could convince investing in us were some former students from the University of Minnesota,” says Christophe, “but it brought us € 90 k, enough to get going and pay for the development of the first equipment.”

But just after all the paperwork was signed in November 2005, Thomas decided to pursue a career at CSIRO in Australia and leave the industry. It left Christophe, who was still working on his PhD, on his own in Liège.

After six months of developing everything from software to hardware, the company won its first contract with an Australian operator, even though the machine was not fully functional yet. But what do you do? Turn it down? Of course you

don't. The result was working overnight again, helped by Thomas who spent the last nights and days coding the software.

THERE IS NO ONE PATTING YOU ON THE BACK TO SAY “KEEP GOING”

“This is a good moment to emphasize how important industry champions are,” say both Christophe and Tanguy. People who understand that things go wrong sometimes, but who don't turn their back on you straight away.

“Dirk Mooren from RWE, Fons Marcelis from Shell, Edmond Poyol from TotalEnergies and Lutz Rieppe from PETRONAS were instrumental in that sense,” says Christophe. “It really helped us build our portfolio after the initial contract in Australia.

The industry as a whole was difficult to convince, but it is individuals who become early adopters that can make the difference for a small company.”

But it remained challenging to win a lot more business, with the 2008 financial crisis on the horizon. “The geomechanical experts always challenged us, with some people claiming that the data we produced was just noise, or too good to be true,” adds Christophe.

In some way, however, this challenge was a good thing, because he started looking at ways to prove that the data produced were not noise, and merely a result of different lithologies they scratched. So, he bought a camera with which he started recording the core at the same time as performing the scratch test. ▶