

Mother's necessity nurtured invention

ENTREPRENEUR : Morris Kaplan | *July 18, 2009*

Article from :  **THE AUSTRALIAN**

AUSTRALIANS love inventions. Inventors, however, rarely achieve commercial success; the "build a better mousetrap" is the preferred route to market for entrepreneurs.

But Victorian Micah Atkin has advanced further than most inventors, having jumped development hurdles and faced off some personal challenges.

An inventor and scientist, he is the developer of a low-cost, handheld instrument that performs complex IVD (in-vitro diagnostics) assays of laboratory quality. It could be used to test for tuberculosis, a disease that kills over two million people a year -- the leading cause of infectious disease deaths.

Coming from a relatively poor family and a mother with polio, Atkin spent his formative years inventing things to help his mother overcome her disability.

"By the time I was 13 I was working for a dental technician, sand-blasting dentures to earn money -- it was really the floor-scrubbing side of a denture clinic.

"My mother had restrictions. She had a lot of aids and gadgets to help her with daily life, anything from turning a tap, to operating a washing machine. You can't go down to the corner store to buy these gadgets. It opened up my mind to how science can help in our everyday lives."

Atkin, 36, says the experience led him to study both science and engineering and to conceive his idea of a way to deliver a low-cost testing system, enabling anyone to perform tests quickly and easily. "TB for example, is readily curable through accurate diagnosis and low-cost drug therapy, yet most badly infected countries cannot afford the highly specialised, high-cost equipment and personnel needed for testing."

Atkin says "any assay, anywhere for anyone" is the holy grail of point-of-care (POC) in-vitro diagnostics. "Our mission is to commercialise technology that powers the handheld instrument and credit card-sized consumable and delivers IVD assays. It's a capability unmatched by competing offerings.

"It's about rapid laboratory-quality results in the field, which makes it ideal for pandemic monitoring, bio-threats, remote or even home health testing," he says.

Starting a company is never easy. Breaking new technology and building a sustainable business around it is orders of magnitude tougher. Atkin's is an inspiring story but he will need all his innovative skills, and more, to make the leap from high-risk, early-stage venture to high-value, entrepreneurial business.

He founded MycroLab in 2003 with business partner Michael Curran. It is very much an early-stage venture but it has come far along the commercialisation pathway. Atkin points to results coming off the working instrument as "proving" the manufacturing concept in a prototype. The company has successfully compared its handheld system against standard lab equipment, producing faster, more accurate results.

The company is at a critical point where "significant" funding is required to get pilot manufacturing. "We need to get a small, but scalable production line so that the volumes are sufficient for trials and so that the reproducibility and yields are enhanced. That would get us to the point that we can, with our international partners, test their assays and go to trials in order to finalise the development on the TB card."

The early personal challenges facing Atkin were clearly formative. "My interest was always in being part of something exciting, of being with something new. We funded ourselves. Now we have a private investor with some industry smarts about him."

Atkin claims that MycroLab has "powerful" competitive advantages. "Both instrument and consumable prices are orders of magnitude cheaper than existing IVD alternatives. It brings IVD testing into this century.

"We'll become manufacturers of the actual consumables. Our IP is over the manufacturing side of things: the little widgets in there, the micro fluid tool set and the hardware. There's this mobile phone sized device, like a PDA. The user will have a test card for the particular application. The user can do the whole process. They put the card in and the results come back in a few minutes.

"The developing world is crying out for laboratory testing. There's no money, no infrastructure or skilled workers to do all these tests. TB is a classic example of where there is a need to know there and then whether a person has the disease and start treating them. Take a look at swine flu; this tool is perfect for pandemic monitoring. Just imagine if every airport had one of these or even the planes themselves. Health authorities would need this."

In the diagnostics sector, entrepreneurs face extensive development cycles made up of pre-clinical development, trials and often tightly regulated distribution to end users, and finding the right channels to customers. Mapping out the industry's ecosystem will reveal the various players in the value chain and will form the basis for identifying partnerships.

Atkins says: "You don't always have clear pathways to the market. At this point TB may be our entry into the market."

He says the veterinary industry presented an easier entry point as it did not have any regulatory hurdles. "We looked at the horseracing industry, which needs a test to immediately determine how a horse is performing. Is the horse being trained too hard? It's too long to send away to laboratory. If they had a monitor at hand, a vet could test the horse straight away. In racing that's big dollars.

"Once you have sales you give investors more confidence. Prove the technology, get to market earlier, leverage all of that to the high value -- human applications. It's a couple of years to get revenue to flow from the TB market. Capital is such a challenge.

"We don't want to reinvent the wheel for diagnostic testing. We have partnerships with two companies for the development, testing and commercialisation of a TB test on the platform. The partners are in the IVD space. Given the urgent and unmet need, non-for-profit organisations and the Bill & Melinda Gates Foundation are mobilising to fund technology solutions for the detection of TB and facilitate market entry into the affected countries."

