up.

Indeed, economists as far back as John Maynard Keynes have ascribed such expectations to "animal spirits" more than reasoned analysis, says the University of Toronto's William Strange.

demic?

"Good luck," says a laughing Strange, a professor of economic policy and analysis at the U of T's Rotman School of Management.

"Now the animal spirits may become a little bit less animal, they may become

HOUSING continued on B6

Scan this code to see how home prices across Canada have changed since 2005.

Rapid-testing idea takes flight

Relay created a new airport COVID-19 screening system with only a half-hour wait

SEAN FRANKLING
SPECIAL TO THE STAR

"If you asked someone two years ago about getting a medical test in an airport, they'd look at you sideways," says Clark Kent, president of Toronto-based Relay Medical Corp. But with the pandemic reshaping our definition of travel safety, providing a negative COVID-19 test is becoming a common component — and sometimes a requirement — of the air travel routine.

Now, Relay's own rapid screening system for COVID-19, using technology from a Canadian company, is helping the country's biggest airport move passengers safely during the pandemic.

Since March, Toronto Pearson International Airport has run more than 8,000 rapid antigen tests for COVID-19 through Relay's Fionet testing system.

RICK MADONIK TORONTO STAR

Relay's CEO Yoav Raiter, left, president Clark Kent and chief science officer Tom Glawdel, the three senior team members behind the pivot to the Fionet rapid testing system.

Before the pandemic, Relay was a small, pre-revenue, research-and-development startup. Its main project was Pharmatrac, a platform that used a camera and AI to track whether or not patients were taking their medication. But when lockdown made it impossible

TESTS continued on B7

Rapid testing helps, but isn't 'silver bullet'

TESTS from B1

to bring test subjects into the lab for product trials, development couldn't continue. That was when Relay's chief science officer, Tom Glawdel, pitched an idea for a new project to Relay's chief executive, Yoav Raiter.

"I remember the phone call in the first lockdown of COVID," says Raiter. "I was in lockdown with my two daughters, and Tom called and said, 'I know you're not going to like it, but I have a great idea.' "

Glawdel had been examining Relay's talent and tools, along with the requirements of pandemic management, and had seen that there would be a need for mass testing. He realized Relay was perfectly positioned to help — Pharmatrac could be adapted to read test results instead of scanning pill containers. And Relay had contacts at Fio Corporation, which makes devices for processing and recording rapid tests for a variety of different diseases, including AIDS and Ebola in Africa.

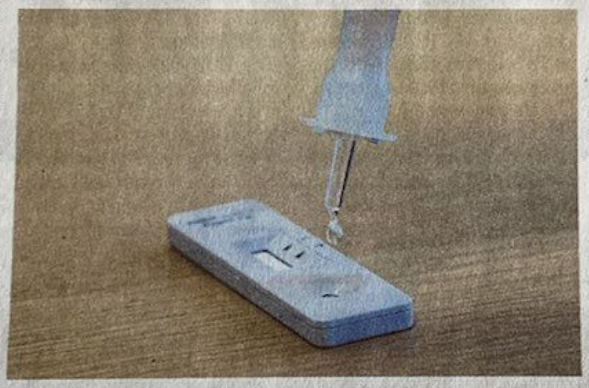
The result was a partnership with Fio to adapt its device, along with original workflow solutions and AI recognition technology from Relay, into a system they call Fionet.

The parts needed to make Fionet "did kind of align," Glawdel says. "There's a bunch of pieces, like solving a puzzle."

Kent says the company was excited to be part of a solution that could get people back to work or to travelling. "That's probably the only common thread you'll find at our very diverse company."

RICK MADONIK PHOTOS TORONTO STAR

Relay's CEO Yoav Raiter, left, president Clark Kent and chief science officer Tom Glawdel created the Fionet rapid testing system, seen on table. Since March, Toronto Pearson International Airport has run more than 8,000 rapid antigen tests for COVID-19 through the Fionet testing system.



Relay's COVID test indicator resembles a home pregnancy test.

Kent, who grew up in London, Ont., in a family with a blue-collar background, took a circuitous route to health care. (He occasionally writes his name with the initial W. Clark Kent, "Just so people don't mistake me for the other guy.") Shortly after starting a degree at Western University, he dropped out when his best friend passed away due to hospital error following a car accident.

"I left the city and kind of never looked back."

At 19, he began a career in finance and business management, including work at boutique investment firms, mining and energy companies and, most recently, in medical technology.

"I found my way to health care. I have a passion for that, influenced by what happened with my very close friend," he says. That passion was part of the reason he helped found Relay and part of the reason he was so eager to find a way for it to help when the pandemic arrived last year.

The airport quick-screening test is representative of Kent's "roll with the punches" mindset.

Passengers wanting to participate in the rapid screening register online before they come to the airport, then report to the testing area in the airport terminal when they arrive.

There, a tester takes a nasal swab, as with any other COVID test, and applies it to an indicator resembling a home pregnancy test. The indicator goes into a queue to be entered into a FioNet machine about the size of a debit-card reader — a timing system lets the machine read the indicator only after the latter has had time to accurately display the results.

The FioNet machine double-checks the test results using AI adapted from Pharmatrac. If the test is positive, it is transmitted to the Ontario Laboratories Information System, and the traveller must schedule and undergo a slower but more accurate polymerase chain reaction test, which takes about 12 hours to show results; travellers who test positive must be isolated while they're waiting. A second positive result requires a 14-day isolation period before travellers can resume their itineraries.

Testing positive for COVID-19 may interrupt travel plans or require passengers to make alternate travel arrangements with their airlines. But for the majority of travellers who test negative, the FioNet system offers a way to streamline the testing process while meeting some airlines' requirement to show a negative result before flying.

These rapid antigen tests at the airport take about 30 minutes from arrival to results — running multiple tests at once, the system can do up to 60 per hour.

In a post-COVID world, says Kent, rapid testing at airports may become as normal as stepping through a metal detector. Both he and Raiter liken the pandemic to 9/11, viewing it as a crisis that will permanently reshape the way we view security.

"I think there's something to that analogy," says Laura Rosella, a professor of epidemiology at the University of Toronto's Dalla Lana School of Public Health who has been a vocal advocate for wider rollouts of rapid antigen testing.

"It's not a silver bullet," she adds, cautioning that rapid testing alone won't return us to unrestricted public life. "The modelling studies show if you do this frequently, as part of a system, that it can actually play a role in reducing (COVID spread) by breaking chains of transmission."

In the long term, both Rosella and the Relay executives expect to see rapid testing used to prevent outbreaks everywhere from workplaces to schools to crowded concerts. On a large enough scale, they may be a piece of the solution to ending lockdowns for good.

For now, Rosella describes high-volume rapid testing as "an added layer of protection" used in tandem with masks and contact tracing, akin to the way taking your shoes off at the airport adds a layer on top of X-ray machines and metal detectors.

Like Kent, Raiter's passion for the medical technology industry comes from an intensely personal story. When he immigrated from Israel 19 years ago, his youngest daughter, who was four at the time, was diagnosed with a brain tumour.

"The doctors said, 'You can choose to get the regular treatment, but Dr. Eric Bouffet from Sick Kids just invented something new.' So I said, 'I'm in.' "

That decision saved his daughter's life and provided the spark to get both her and Raiter himself interested in medicine.

"You talk to the doctors and you start to realize there's more to life than just work and finance," he says.

So when he got the chance to become a project manager for medical technologies, Raiter took it, launching the career that placed him in the CEO's chair at Relay when the pandemic began. His daughter, now 22, is studying to be a doctor.

"We wanted to find a way to give back to the country that saved her," Raiter says.

He uses war analogies to describe the pandemic. "This is a biology war," he says. "Every person can become a carrier of a biology bomb. We're providing biosecurity."

Glawdel's interest in medicine is also long-standing. As a child, he needed treatment for a heart defect when his family immigrated from Poland.

"I've always been close to medicine in that sense," Glawdel says.

"I always thought I was going to go into medicine, but I found I had more of an inclination for engineering."

When the pandemic hit, Glawdel saw a chance to make a difference. "Relay Medical was in a unique position. We had the right people. We're nimble. We saw an opportunity and we took it to get into the fight and actually do something."

Kent says the publicity and market opportunities from their trial at Pearson have also made a big difference for Relay financially.

"We went from a small company raising $1 million or $2 million here and there. We ended the year off raising over $10 million."

All three of Relay's senior executives agree that working in medical technology means thinking about what they can do to help, not just how much money they can make.

"When you get something that works in the field, it's more than just a financial reward. It helps people directly," Glawdel says.

Or as Raiter puts it: "You don't have to be a doctor to save lives."