

-Technology / Inventions**The tech making Israel proud**

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As Israel celebrates 73 years of independence, the country has cemented its place as a global tech powerhouse, with more than 60 privately-held 'unicorns' valued at more than \$1 billion; more than 80 Israeli publicly traded companies listed in the United States; and some of the most innovative ideas and technologies in the world.

Here is a look at 10 tech innovations that have made Start-Up Nation proud in the past year:

1) Corona Test

A new Israeli COVID test developed at Sheba Medical Center can detect corona in a fluid sample in just 20 seconds. The handheld SpectraLIT machine received EU approval just two weeks ago, and is expected to help Europe return to international air travel. The test is inexpensive and more accurate than the fast antigen tests that are beginning to be used in some airports.

2) Cornea Implant

A 78-year old blind man got his sight back in January with the implant of an artificial cornea, the first such operation in the world. The artificial cornea, designed by Ra'anana-based CorNeat Vision, was implanted in surgery performed at Rabin Medical Center in Petah Tikva. Upon removal of bandages, the patient was immediately able to read text and recognize family members. The test was the first of a clinical trial that will hopefully lead to a new medical process that can rehabilitate the vision of corneally blind patients with a relatively simple implantation procedure.

3) Drone Network

Israel is looking to become the first country in the world to develop a national drone network that would enable commercial deliveries, medical transportation and urban air mobility. The government-backed project, which may lay the groundwork for autonomous drone deliveries throughout Israel in the coming years, is seen as the most progressive project of its type in the world.

In one of the trials scheduled for this summer, a branch of Pizza Hut in Northern Israel will deliver pizzas by autonomous drone to nearby customers who can't be serviced directly. Other trial runs will include rapid deliveries of critical medical supplies to hospitals. All drone flights will be centrally coordinated through a drone flight-control room in Haifa.

4) Desalination

Israel has always worried about its water supply, monitoring the Sea of Galilee's water level closely in fear of running dry. Those days are no longer. About 85% of Israel's water currently comes from desalination, with five desalination plants currently in operation. Another five are expected to be completed in the coming years, which will then see 100% of Israel's water coming from desalination plants.

At that point, Israel will just keep the pump in the Sea of Galilee as an emergency backup. Once desperate for water, Israel now advises countries around the world on how to manage their water resources. And a new tunnel being built to upgrade Jerusalem's water infrastructure is one of the most ambitious water projects in the world.

5) Animated Ancestors

A Tel Aviv-based company created technology that can bring faces from the past back to life by turning old photos into videos. The new "Deep Nostalgia" feature – part of the app for Israeli genealogy company MyHeritage – allows users to upload images and press 'animate' to automati-

cally produce a video with the photo subject smiling and looking around. It's a novel way to "meet" relatives from past generations.

6) Home Diagnosis

Netanya-based Tyto Care offers technology that allows patients to conduct diagnostic examinations of the lungs, heart, throat and ears in the comfort of their own homes. The company's platform connects people to clinicians for remote home examination and diagnosis solutions, with solutions designed to replicate a face-to-face clinician visit.

Diagnostic tools include a hand-held modular examination tool for examining the heart, lungs, skin, throat, ears and body temperature, and a telehealth platform for conducting live video exams and sharing and analyzing the data. The technology is in use in hospitals in Israel and around the world.

7) Personalized Diet

DayTwo is helping diabetics manage their conditions with a personalized diet of what they should eat in order to maintain balanced blood glucose levels – all powered by artificial intelligence. The company's product analyzes a person's blood and stool samples to predict his personalized blood-sugar response to any food or meal with high accuracy.

So, for example, bananas but not cookies might spike blood sugar in one person but have an opposite effect for another. As pre-existing diabetes is a big risk factor for COVID, the company thrived during the pandemic, and now has tens of thousands of users around the world.

8) Maritime Security

When a rogue oil tanker spilled oil that polluted Israel's shores in one of the country's worst-ever environmental disasters earlier this year, how did Israel find the culprit so quickly? Tel Aviv-based Windward, which provides governments and companies with risk analyses on maritime trade regarding security, safety, sanctions, environmental regulations and compliance, was one of the companies that Israel consulted to identify the source of the spill.

Maritime security is becoming a big issue worldwide, and Windward uses artificial intelligence to process information from satellite images, radio frequencies, shipping and port data, weather information, and more to provide insights and risk assessments.

9) Faster Checkout

Several Israeli companies are hoping to eliminate checkout lines at supermarkets. Trigo installs a discreet camera network that identifies customers via their smartphone and uses advanced algorithms to track their product selection, enabling automated billing and no need to stand in line at the checkout. The company already works with stores around Europe.

Another company, SuperSmart, saves customers the waiting time at the checkout by installing a dedicated application on their mobile device and scanning product info into it. At the end of the purchase, instead of standing in line at the checkout, shoppers put the cart in a scanning device that scans its contents.

10) Pay by Face

Meanwhile, Holon-based Preciate is looking to make the entire shopping process as simple as taking a selfie. The company's Pay by Face kiosk system is already in use in several restaurant chains around the country. The system allows venues to set up a self-service kiosk outside their doors, where customers can easily register with a quick selfie and payment details. Once that is all set, everything is remembered for future visits, so ordering and payment can be done almost instantly. Solutions like these attracted more attention during the pandemic, when restrictions sometimes limited indoor access.