



# MADE IN ISRAEL



# Israeli inventions and innovations

## Making life better in many, many ways

Sources:

<https://theculturetrip.com/middle-east/israel/articles/11-israeli-innovations-that-changed-the-world/>

<https://jewishnews.timesofisrael.com/top-10-israeli-inventions-need-aware/>



# SniffPhone – the device that can smell disease



The SniffPhone is a diagnostic tool that can literally sniff out disease. It is the evolution of the 'NaNose' technology developed by Professor Hossam Haick of the Technion-Israel Institute of Technology.

NaNose is a breathalyzer that can detect the symptomatic odor caused by some cancerous tumors, Parkinson's dementia, multiple sclerosis and many more diseases to an 86% to 93% degree of accuracy. The technology is also accessible via a plug-in that can be attached to smartphones.

It will be "highly accurate, affordable, easy to use, comfortable and easy to repeat".

# ReWalk – a battery-packed ‘exoskeleton’

After a tragic accident left him paralyzed from the waist down, Dr. Amit Goffer spent years developing a way for paraplegics to be less dependent on wheelchairs.

Enter the ReWalk by Argo Medical Technologies. Allowing the user to stand upright, walk and even climb stairs, this exoskeleton-esque robot receives movement signals from a wristwatch and is powered by a backpack battery. It's been available for public use since 2014 and has made appearances at the London Marathon and the 2012 London Paralympics.



# PillCam – a swallowable medical camera



Inspired by a chronic stomach pain, scientist Gavriel Iddan of Given Imaging (now Medtronic) came up with the idea of creating a digestible, disposable camera that transmits data to a receiver outside the body. The PillCam is used to diagnose infection, intestinal disorders and cancers in the digestive system. It can access areas of the digestive system that are typically out of range during a conventional procedure.

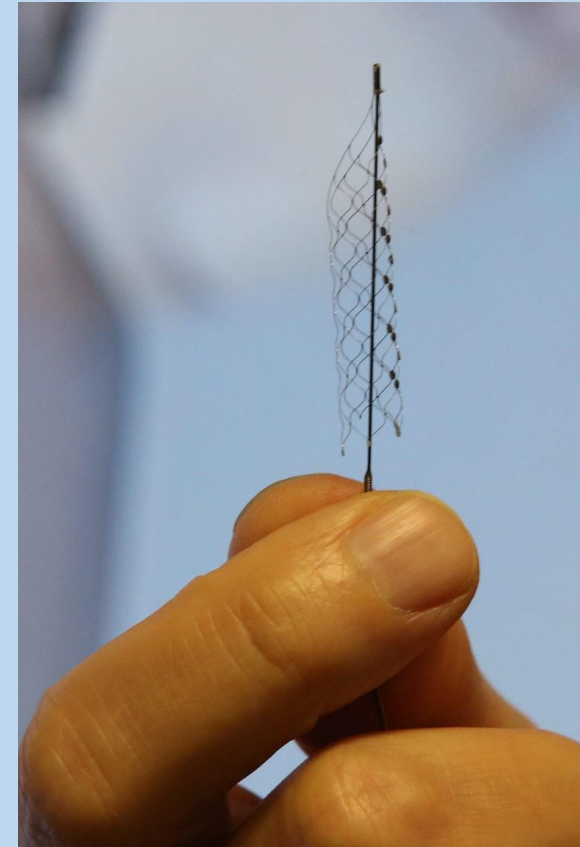
The PillCam allows patients to avoid visits to the hospital. For his invention, Iddan received the European Inventor Award in 2011, 14 years after the prototype was first released.

# The Flexible Stent – preventative medical tech

Millions of people owe their lives to the flexible stent – a tube-shaped device used to open up arteries to treat coronary heart disease and blockages, preventing the need for open-heart surgery.

Traditional, rigid stents made for more complicated operations. With the first ever flexible stent in 1996, surgery became easier and safer.

Known in the medical world as the NIR stent or EluNIR™ it was developed by Medinol, a company operated by husband-and-wife team Kobi and Judith Richter.





# Firewall – the original protection against malware



It is software that protects our data from dangerous cyber activity. The inventors are Gil Shwed, Marius Nacht and Shlomo Kramer of Israel-based Check Point Software Technologies.

The team developed the first ever fully viable commercial firewall in 1993, and since then Check Point has expanded, opening subsidiaries overseas and partnering with major tech companies, including Nokia.

In 2018, Shwed was awarded the state of Israel's highest honor, the Israel Prize, for contributions towards technology and innovation.

# ICQ – the first global instant messenger

ICQ is an “original instant messenger” a free-to-download app developed in 1996 by Israeli internet company Mirabilis.

In the 1990’s, there were only a few messenger services, including MIT’s Zephyr Notification System. Most were specialized, used for peer-to-peer communication in places like universities and businesses.

Software developers Sefi Vigiser, Yair Goldfinger, Amnon Amir and Arik Vardi teamed up with internet mogul Yossi Vardi after discovering a clear gap in the market – a need for a universal communication system.

ICQ is a play on the English phrase “I seek you”. Windows users can send each other messages in real time. The company was sold to AOL for USD\$407 million in 1998.



# Disk on Key – the world's first USB drive



An Israeli patent paved the way for one of the world's most common everyday items – the portable USB memory drive.

The technology itself is a marriage of two innovative prototypes: flash memory, developed by Toshiba in the 1980s, and when a coalition of industry leaders developed Universal Serial Bus (USB–port) used to connect devices.

It wasn't until 1999 that Israel-based company M-Systems filed a patent for the “USB-based PC flash disk”, opening the door for the development and production of the portable USB that we all know and love.



# Netafim – a desert-friendly irrigation system

Israeli farmers struggled to grow crops in the country's arid desert climate. This changed in 1965, when Simcha Blass observed two adjacent trees. One large, one small. He discovered a tiny crack in the water pipe next to the bigger tree. He realized that a few regular drips of water are enough to make a huge difference in plant growth.

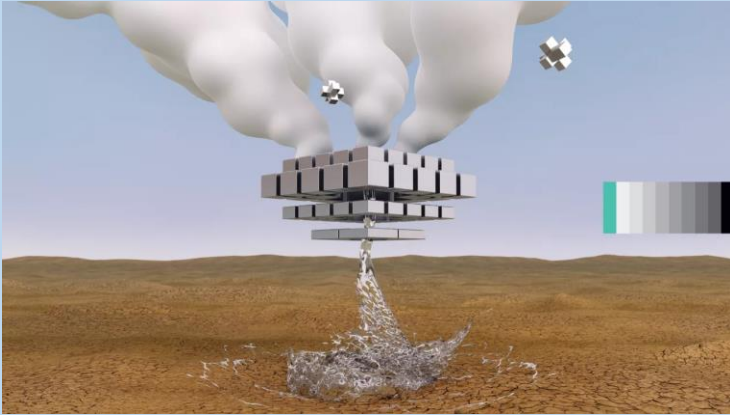
Micro-irrigation was born: Blass designed a pipe that would drip water on to crops, making it possible to grow them while using a limited amount of water.

Netafim – literally meaning 'drops of water' had improved crop yields by 70% in the Arava desert and reduced water usage in the region by 5%.

Today, Netafim is present in 110 countries, and has revitalized over 10 million hectares of land.



# Watergen – drinking water produced from thin air



This start-up is producing clean drinking water out of thin air using nothing more than a portable generator.

Founded in 2010 by Arye Kohavi, Watergen's devices use patented GENius technology to extract humidity from the air – vaporized water that is present in the atmosphere everywhere from rainforests to desert climates like Israel's.

Watergen's generators cool and liquidize the air vapor, producing up to four liters of water for every kilowatt-hour of electricity they use.

The generators also include built-in filtration technology to account for air pollution, making it safe to consume.

The life-saving device is already being used in disaster zones across the globe, including 2017's Hurricane Maria in Puerto Rico. It aims to provide clean drinking water for millions, especially for people in economically unstable climates.

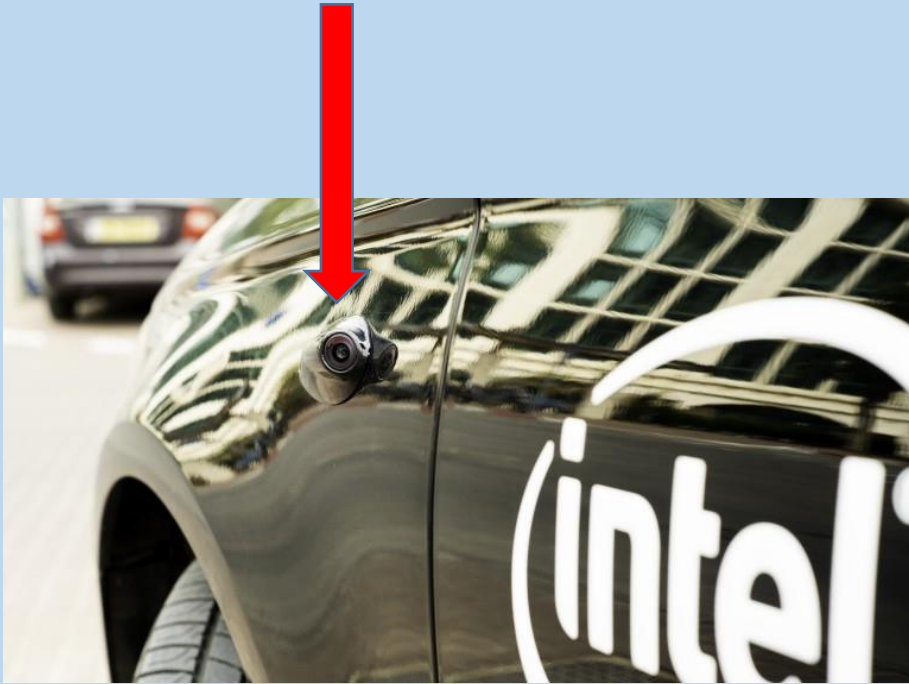
# BioBee – harmless pest control

Headquartered in a kibbutz in the northern Beit Shean Valley, BioBee is a multinational company that focuses on biological pest control. Under the guidance of bug lover Akiva Falk, it aims to reduce the use of pesticides in agriculture, using the natural power of insects to make crops safer to eat and their habitat a more secure place.

BioBee breeds bees for pollination in greenhouses, using 'friendly insects' like mites, wasps and beetles to attack harmful pests, and reducing the number of harmful insects by genetically modifying their ability to reproduce.



# Mobileye – life-saving AI



“Sensing the Future” is the motto for Mobileye, an Israeli security company valued at USD\$10 billion.

The car technology was developed in 1999 by Amon Shashua and Ziv Aviram. They developed algorithms that would allow a tiny camera placed in cars to alert drivers of potential hazards, such as pedestrians or steering out of the lane.

Today, more than 25 global automakers use Mobileye technology to make driving safer, and over 15 million vehicles worldwide are equipped with its technology. The number of lives it has saved is countless.



# Waze – a navigation device with a twist



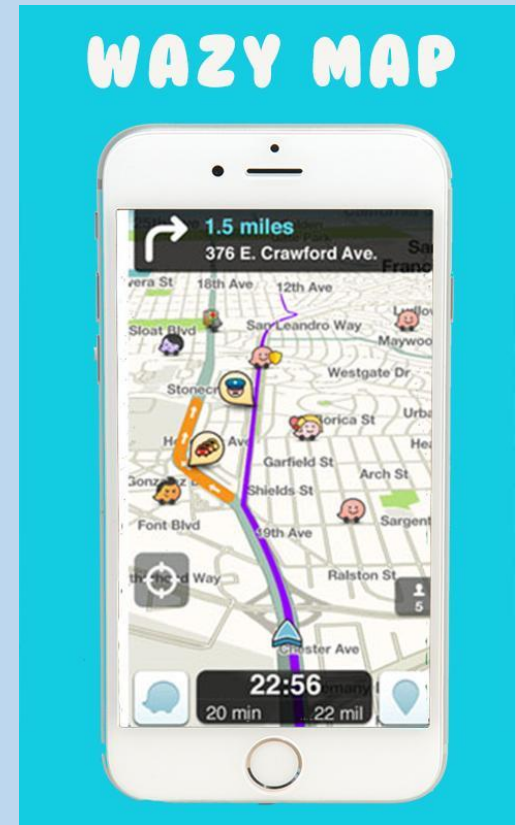
When Ehud Shabati first tried using a GPS, he was simultaneously delighted and disappointed. The engineer made it from A to B, but his journey was hindered by traffic and roadworks.

He looked into other GPS systems and found they were all effective at guiding their users, but they couldn't provide traffic information in real time.

The engineer then mapped out his native Israel, first on his own and later with co-founders Uri Levine and Amir Shinar, aiming to make a navigation device that provided road reports on the go.

They had built a community of thousands of drivers on Waze, using crowdsourcing to collect incident reports such as accidents and roadworks.

Waze was sold to Google for USD\$1.1billion in 2013, and today provides real-time traffic information to more than 50 million users.





# Epilady a safe system of hair removal



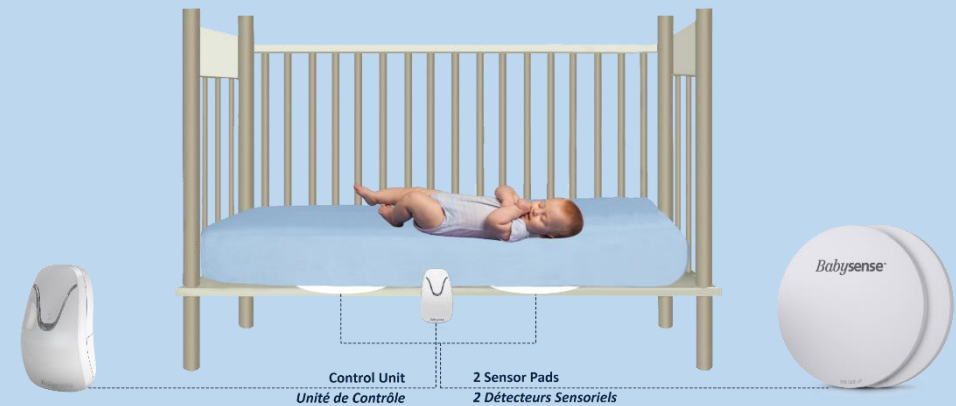
Israeli inventions in the consumer goods market continue to thrive, as seen by the invention of the epilator. The first one, Epilady, was originally manufactured by a Kibbutz in Israel in 1986, and has since sold more than 30 million units.

An epilator is an electrical device used to remove hair by mechanically grasping multiple hairs simultaneously and pulling them out. The way in which epilators pull out hair is similar to waxing, although unlike waxing, they do not remove cells from the epithelium of the epidermis.

# Baby Sense Non-Contact Infant Movement Monitor

This device helps prevent cot deaths by monitoring a baby's breathing and movements through the mattress while they sleep.

An auditory and visual alarm is activated if any irregularities occur during their sleep, which has helped parents prevent the horrors of cot death worldwide.



# Viber – the Free Phone App

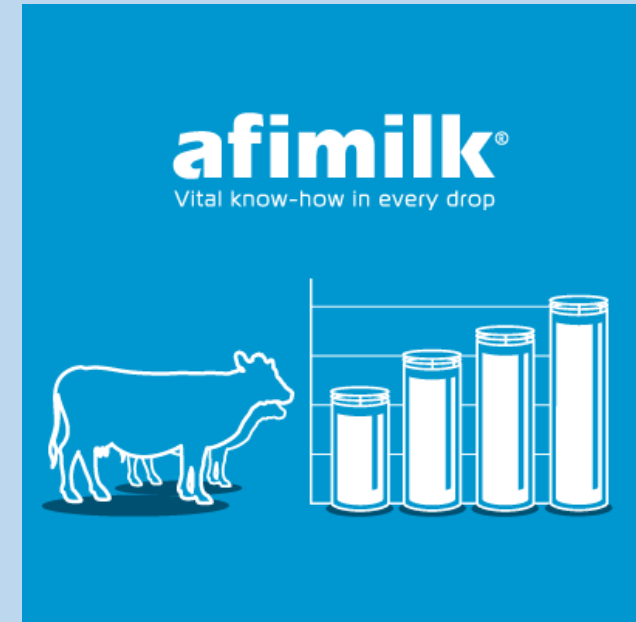


Available for download on any smart phone, the app allows you to make calls across the world for free, using Wi-Fi.

Its high speed connection and ability to keep in contact with anyone anywhere truly makes it one of Israel's best inventions.

## afimilk – getting more from the cow!

Israel really is ‘the land of milk and honey’ thanks to its ‘super cows’, which produce far more milk than other countries. Israeli cows produce up to 10.5 tons a year – 10% more than North American cows and almost 50% more than Germany’s cows! A combination of air conditioning, constant monitoring and pedometers to tell when the animals are getting fidgety helps to keep the milk flowing.



# The “fathers” of the Cherry Tomato



In the 1970's, Prof. Rabinowitch of Hebrew University and Prof. Nachum Kedar created the very first extended shelf-life tomatoes. They used genetic knowhow to reinfuse the wonderful flavor and aroma of tomatoes that had been lost through earlier breeding programs for disease resistance and heirloom traits.

They manipulated the coin-sized cherry tomato, originally a South American weed. It was domesticated up until then primarily as a European and American backyard plant.

“Cherry tomatoes were tasteless and had no shelf life, so they couldn't be made into a commodity until Nachum Kedar and I introduced better breeding for flavor and long shelf life,”





**THE END**

Photo Credit: (Photo: US National Archives and Records Administration)