

# ISRAEL HIGH-TECH & INVESTMENT REPORT

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## Iron Dome destroys missiles



Israel will deploy at least two of its homemade Iron Dome anti-missile systems by November, according to the country's Defense Ministry.

With the United States-Israeli Arrow as the main protection for the Jewish state. "The Iron Dome is an effective and innovative mobile defense solution for countering short range rockets and 155 mm artillery shell threats ... in all weather conditions, including low clouds, rain, dust storms or

The decision was made after the final set of tests were successfully carried out.

Although the system is not without controversy at home, several countries, including India, are interested in purchasing it from Israel.

Other than its potential to enhance Israel's strategic edge, analysts believe the system has a far-reaching impact on the big picture of arms control and global stability.

Iron Dome is a mobile air defense system that is manufactured by Israel's Rafael Advance Defense Systems. The government company has a track record of producing highly regarded weapon systems including the Popeye surface to air missile, the Spike anti-tank guided missile and the Typhoon weapon system.

Iron Dome is Israel's answer to the threat of short- and medium-range rockets that can travel some 35 to 45 miles. Many of the rockets have fallen on communities and as far inland as Ashkelon. It is the final piece of the Israeli defense against aerial attack. It is seen as the last line of defense.

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fog,” according to specifications.

“The system uses a unique interceptor with a special warhead that detonates and destroys any target in the air within seconds,” it added.

The system identifies the launch of an artillery shell or rocket and then monitors its trajectory. The data is analyzed and a point of impact is established. If the target area poses a risk then an interceptor will be launched to take out the threat. This happens as quickly as possible to try to ensure the incoming warhead is destroyed over an area where there is less potential risk to those on the ground.

“Iron Dome’s breakthrough is not the intercepting of missiles, but its new concept based on highly-discriminating command and control technology that automatically determines which threats to intercept and which to ignore all in 15 to 90 seconds,” according to Barbara Opall-Rome, the Israel bureau chief of Defense News.

Indeed in recent trials, it is reported that the system was able to detect simultaneous launches from various directions and to determine which posed a real threat and which it could ignore.

One of the main points of contention about the Iron Dome is the cost of each anti-missile missile. Analysts estimate that one salvo could cost as much as \$50,000, which for a small country in a war situation that would quickly become a huge sum.

This is countered by Israel’s defense establishment, which maintains that the system could prevent wars from breaking out and the cost of each day of a military campaign is far higher than the upkeep of the Iron Dome.

Other critics suggest the system may prove ineffective against the Kassam rockets fired from Gaza, saying the distance and time it takes for the homemade rockets to reach Israel is too short for the Iron Dome. Some propose the use of laser technology instead, but Israel’s Defense Ministry

has always rejected that idea.

However, the system’s backers say its advantages far outweigh negatives. Indeed U.S. President Barack Obama has put his full weight behind the program and what he described earlier this month as “Israel’s special security needs.”

In May, the White House asked Congress to approve a \$205m. package to help Israel complete the manufacture and deployment of the Iron Dome. In so doing Obama’s staffers said they understood the risk Israelis face both to the north and the south.

Iron Dome was developed following the war with the South- Lebanon-based Hezbollah in the summer of 2006. Israel sustained heavy rocket fire from positions just across its northern border, with some loss of life and considerable damage to property.

Throughout the last decade Israel also faced thousands of rockets fired on its southern towns from the Gaza Strip. In the main all the Israel

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Defense Forces managed to do was to put in place a warning system that gave residents a few seconds to run to their nearest bomb shelters. Experts believe the Iron Dome will change the face of the battle between Israel and its enemies just a few miles away in Lebanon and Gaza.

Israel hopes that the Iron Dome will not only prove a success at home but that it will also generate cash in sales to foreign governments. Early indications are that there is considerable interest overseas. India is among those who is interested in the system and already enjoys a close defense relationship with Israel.

“By developing, testing and ultimately deploying the Iron Dome in less than three years, Israel re-establishes itself as a technology powerhouse as well as a preferred supplier on the world market,” added Opall-Rome

The Iron Dome is the latest in a series of missile-related programs unveiled around the world. It is viewed in the current thinking in Washington as a sea change in policy towards missile defense.

“A great amount of U.S. technology is in the Iron Dome. Politically, missile defense is changing from the great undermining force wrecking arms control, to a capability that will receive much more official U.S. support in the future. Missile defense will be a cornerstone of all future arms control and stability,” Bracken said.

### George Soros buys Comverse stake



George Soros has reached a 5.14% stake in Comverse Technology Inc. (Pink Sheets: CMVT.PK) according to a statement that his Soros Fund Management filed with the US Securities and Exchange Commission (SEC). The Soros Fund

Management owns 10,381,566 shares in the company.

The stake is worth \$78.3 million at Comverse’s closing price of



\$7.55 per share yesterday.

Comverse filed a request with the SEC to sell 10% of the 28 million shares it holds in Verint Systems Inc. (Nasdaq: VRNT). Even after a sale, Comverse will still remain Verint’s controlling shareholder, with a stake of around 60%.

### Hebrew U. scientists demonstrate novel memory and logic device

Protein from poplar trees can be used to greatly reduce size of memory elements and increase the density of computer memory

Scientists from the Hebrew University of Jerusalem have succeeded in showing how it is possible to greatly expand the memory capacity of future computers through the use of memory units based on silica nanoparticles combined with protein molecules obtained from the poplar tree.

In doing so, they say, they have developed an alternative avenue to miniaturize memory elements while increasing the number and capacity of memory and functional logic elements in computers. This approach, they say, could replace standard fabrication techniques in use until now for increasing computer memory capacity, a process which involves ever-increasing manufacturing costs.

The Hebrew University project involves the genetic engineering of poplar protein to enable its hybridization with a silicon nanoparticle. In this process. The nanoparticles are attached to the inner pore of a stable, ring-like protein (the poplar derivative), and these hybrids are arranged in a large network, or array, of very close, molecular memory elements.

Prof. Danny Porath and his graduate student Izhak Medalsy of the Institute of Chemistry at the Hebrew University have succeeded in successfully demonstrating how stable computing activity in a tiny memory element can be carried out in this way. The practical result is a cost-effective system that greatly increases existing memory capacity

while significantly reducing the space required to carry out this volume of activity.

The genetically engineered poplar-derived protein complexes were developed in the laboratory of Prof. Oded Shoseyrov in the framework of the doctoral thesis of Dr. Arnon Heyman at the Robert H. Smith Faculty of Agriculture, Food and Environment of the Hebrew University.

An article describing the work of the scientists has been published in the Journal of Nature Nanotechnology.

The researchers are hopeful that this technology, which has been patented by Yissum, the technology transfer company of the Hebrew University, and licensed to Fulcrum SP Ltd., will prove to be a commercially successful alternative to current computer systems.

### **Israeli VC firms' share in local funding hits 10-year low**

An Israel Venture Capital Research Center - IVC quarterly report on venture capital fund raising shows that while Israeli funds invested more in the second quarter than they did in the first quarter, their overall share of local fundraising fell to its lowest level in ten years.

IVC Research Center CEO Koby Simana said, "We are seeing what may be the seeds of recovery in capital raising by Israeli high-tech companies. However, the share of Israeli VC fund activity continues to drop - declining in the second quarter to its lowest level in ten years. In the meanwhile, some of the impetus can be explained by non-Israeli VC funds stepping up. It still remains to be seen if the increase in amounts raised is a one time event or a bona fide change in the trend."

In the second quarter, 104 Israeli high-tech companies raised \$343 million from venture capital funds and other venture investors both local and foreign. 122 companies up 47% from the \$234 million raised by 91 companies in the first quarter of 2010, and 23% above the \$279 million raised the amount in the second quarter of 2009.

The average high-tech financing round was \$3.3 million, compared to \$2.57 million in the previous quarter and \$2.29 million in the second quarter of 2009.

Sixty-three companies attracted more than \$1 million each. Of these, two companies raised more than \$20 million each, seven companies raised \$10 million to \$20 million each and 15 companies raised \$5 million to \$10 million each.

In the second quarter of 2010, Israeli VC funds invested \$91 million in Israeli companies, 17% more than the \$78 million in the first quarter, but 19% below the \$113 million invested in the corresponding quarter of 2009.

Israeli VC funds accounted for 26% of the total amount invested in Israeli high-tech, compared to 33% in the previous quarter and 40% in the corresponding quarter of 2009. The remainder of capital came from foreign investors as well as from non-VC Israeli investors.

Israeli VC funds invested \$12 million in foreign companies during the second quarter.

The life sciences sector continued to lead capital raising both in the second quarter, with \$109 million (32%), and in the first half, with \$195 million (34%). The Internet sector followed with \$70 million (20%) in the second quarter. Vending machine sells medicinals

After soda, candy and condoms, a vending machine for medicine?

The pharmaceutical department of the Health Ministry is pushing to change regulations so that medicines that do not require a prescription can be sold in vending machines.

### **German and Israeli ministries fund research project with Inge Watter Technologies AG**

The German Federal Ministry of Education and Research (BMBF) and the Israeli Ministry of Science and Technology (MOST) have launched a research project with 1.5 million euros of funding. The three partners in the project are Dresden

Technical University, the Ben-Gurion University of the Negev in Israel, and the German company Inge watechnologies AG, which specializes in ultrafiltration and membrane technology. The aim is to find ways of reducing fouling and scaling in membranes – especially in the context of treating municipal waste water – in order to improve the membranes' performance and durability and ultimately improve the efficiency of a reverse osmosis (RO) plant.

For now, "The draft proposal was sent to everyone concerned, and the final version will determine how the machines will be monitored," the Health Ministry said in a statement. "All other issues, including the location of the vending machines, will be discussed after receiving the comments on the draft."

#### BGU Researcher Receives US-AID MERC Grant for Water Purification Project with the Palestinian Authority

Ben-Gurion University of the Negev (BGU) researcher Dr. Moshe Herzberg and Prof. Mohamed Saleem Ali-Shtayeh of the Biodiversity & Environmental Research Center (BERC) in Nablus, have received a US-AID MERC grant of \$659,410 to increase the clean water supply around Israel and the Middle East.

The grant will address befouling of Reverse Osmosis (RO) membranes during reclamation of secondary wastewater. Reverse Osmosis membrane filtration is normally used for desalination and reclamation of secondary effluents removing organics and undesired salts from water. VocalTec soars 150% on YMAX merger

#### VocalTec merges with YMAX



VoIP pioneer VocalTec Communications Ltd. (NASDAQ:VOCL) announced a merger with private company YMAX Corporation, the creator of magicJack. VocalTec will essentially be absorbed by YMAX, and the merged company will be traded on Nadsaq.

VocalTec was founded in VoIP in 1994, and went public in 1996. The share price skyrocketed following an investment by Deutsche Telekom AG (NYSE: DT; XETRA: DTEG). However, other companies dominated the VoIP market that VocalTec invented, and the company fell by the wayside as a small-cap firm that failed to leverage its status as pioneer.

On news of the merger, VocalTec's share price soared 150%. The market cap of \$19 million was a two-year high, though still only a fraction of the peak market cap.

The merged company will be traded under the symbol "CALL". VocalTec and YMAX estimate the merged enterprise value at \$245 million, or at least \$17.50 per share. Based on the number of shares of the merged company, the market cap would be more than \$200 million, reflecting a \$20 million value for VocalTec's part.

VocalTec said that it expects the merged company to have \$110-125 million revenues this year, and to post a profit in the current quarter.

VocalTec president and CEO Ido Gur will manage the merged company's business in Israel. He said, "I am excited about the potential to become the worldwide, leading provider of VOIP and soft phone applications using SIP. I strongly believe that the synergies enabled by this business combination will allow us to achieve this target."

YMAX CEO Dan Borislow will become CEO of the merged company. He founded the Florida-based company less than three years ago. YMAX is the largest CLEC (Competitive Local Exchange Carrier) in the US. The company's magicJack device connects to telephones or PCs, and can make calls for a fixed annual fee. The company says that it has sold over 6.5 million magicJacks since 2008.



#### Amdocs, AT&T launch R&D center in Israel

"A historic day," is how Amdocs Ltd. (NYSE: DOX) president and CEO

Dov Baharav described the company's new joint initiative with US telecommunications giant AT&T Inc. (NYSE: T) to set up the Amdocs Innovations Center, which will enable Israeli companies to develop products and solutions with Amdocs for AT&T.

As part of AT&T's "Rethink the Possible" program, the company has set up two centers, two in the US and one in Israel, with strategic partners: Ericsson AB (NYSE; SAX: ERIC), Alcatel Lucent SA (NYSE; Euronext: ALU), and Amdocs. Amdocs and AT&T did not disclose how much they will invest

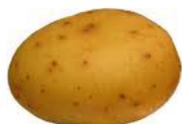


in the Israeli innovations center, or how many people it will employ, but Baharav and AT&T CTO John Donovan who came to Israel said that the activity had already begun, and that the objective was for full operations to begin before the end of the year.

Amdocs develops billing and customer management relations (CMR) solutions for telecommunications providers. The innovations center aims at fostering collaboration with telephone, mobile phone and smartphone manufacturers, applications developers, and network equipment makers in order to expedite the development of the next-generation broadband applications for wireline and mobile devices.

Amdocs and AT&T called on Israeli companies to approach them and work with them. "We've seen that most of the smartest people actually don't work for Amdocs," said Baharav. "That's why we developed this program to work with start-ups, and enable them to grow through joint projects or investment in them."

**Israeli-developed boiled potato batteries may provide cheap power**



An electric battery based on boiled potatoes could provide a cheap source of electricity in the developing world, according to

the technology transfer company of the Hebrew University of Jerusalem.

The treated potato battery generates energy that is five to 50 times cheaper than commercially available batteries, Yissum Research Development Co. said on Thursday. A light powered by the battery is at least six times more economical than kerosene lamps often used in the developing world.

"The ability to provide electrical power with such simple and natural means could benefit millions of people in the developing world, literally bringing light and telecommunication to their life in areas currently lacking electrical infrastructure," Yaacov Michlin, chief executive of Yissum, said.

The findings were published in the June issue of the Journal of Renewable and Sustainable Energy.

Haim Rabinowitch and research student Alex Golberg at Israel's Hebrew University jointly with Boris Rubinsky at the University of California at Berkeley discovered a new way to construct an efficient battery using zinc and copper electrodes and a slice of an ordinary potato.

They found that boiling the potato prior to use in electrolysis increased electric power up to 10-fold over the untreated potato and enabled the battery to work for days and even weeks.

Potatoes are produced in 130 countries over a wide range of climates and thus available year round. It is the world's number one non-grain starch food commodity.

**Gesture control**

Most people think of video chat when they think of front-facing cameras on phones like the HTC Evo 4G or the upcoming iPhone 4. But an Israeli tech company has another use in mind: gesture control, such as answering a call simply by waving your hand in front of the lens. Interesting.

EyeSight Technologies has been offering what

it calls “touch-free” gesture control for Nokia phones since last year, according to Engadget, and the company has just announced that it’s now offering its EyeCan and EyePlay development tools for Android phones, such as the dual camera-packing (and apparently sold-out) Evo 4G.

In an EyeSight demo video, users can be seen swiping through photos, waving up and down to skip music tracks, taking and rejecting incoming calls, scrolling through Web pages, sending text messages, and even hurling virtual throwing stars (for a game), all by waving their hands in front of the phone’s front- and rear-facing camera lenses.

Interesting concept, although why bother with EyeSight’s “touch-free” gesture technology when you can just swipe your phone’s touch screen?

Let’s not forget that not every mobile phone has a touch-enabled display. Plenty of popular “multimedia”-type phones don’t — and remember, the Android OS was designed to work with non-touch screen phones as well as touch screens. EyeSight’s gesture technology could be a handy way for those with bargain-priced handsets to swipe their way through Web pages, photo galleries or music play lists without having to fiddle with arcane soft-key menus.

Then again, the EyeSight software “solution” might be handy even on touch screen phones: say, for taking a picture by waving your hand rather than tapping the screen, or taking a call while you’re bobbing and weaving down a crowded sidewalk.

So, yes, an interesting concept. But the EyeSight technology won’t take off unless it’s embraced by app developers and handset makers alike, which remains to be seen.

### **The Origins of Israel’s Pharmaceutical Industry**



Teva (Hebrew for “nature”) was

founded in 1935 by Elsa Kuver and Dr. Gunter Friedlander in Jerusalem. Prior to World War II, Germany was the center of the global pharmaceutical industry. Many immigrants from that country brought with them pharmaceutical expertise that provided a firm foundation upon which the Israeli drug industry was built. Notwithstanding the ongoing violence of the Middle East, Teva enjoyed some advantages over its competitors around the world. For one, Israel attracted a

high concentration of scientists – more per capita than any nation in the world. Furthermore, the Israeli government granted Teva tax subsidies to encourage the development and production of new drugs. It was in this environment that Teva grew, going public in 1951 on the Tel Aviv Stock Exchange. Having consolidated its domestic position, Teva began to expand geographically in the early 1980s. Eli Hurvitz, a kibbutznik who joined the company in a junior management position after graduating in economics and business administration from Hebrew University in 1957, was destined to transform Teva into a global pharmaceutical powerhouse. He perceived an opportunity to penetrate the U.S. market when the federal Waxman-Hatch Act passed Congress in 1984. This legislation concerned generic drugs, treatments that have lost their patent protection. Also known as multi-source or offpatent medicines, generics are chemically identical to branded prescription drugs, but they are priced 30 to 70 percent less than patented versions.

Hurvitz used the generics segment as Teva’s entree into the U.S. pharmaceutical market. In 1985, the company forged an agreement with chemical conglomerate W.R. Grace to create TAG Pharmaceuticals, a 50-50 joint venture. In 1985, TAG acquired Lemmon Co., a Pennsylvania-based company. Lemmon became the sales and distribution arm for generics manufactured by Teva in Israel. Although CEO Hurvitz later said that “an Israeli who’s coming to the States has a David and Goliath syndrome,” he reminded himself that little David prevailed in that Biblical battle. The potential Teva saw in Lemmon soon turned to profits; the U.S. venture’s sales more

than doubled from \$17 Teva million at the time of its acquisition to about \$40 million in 1987, by which time it was marketing seven generic versions of branded drugs.

The company's first major new drug, known as Copaxone,

was originated more than two decades earlier in the

laboratories of Israel's Weizmann Institute, where doctoral student Dvora Teitelbaum was studying the use of synthetic proteins to quell multiple sclerosis attacks in animals. Together with Professors Michael Sela and

Ruth Arnon, Teitelbaum spent 15 years isolating and researching the polymer COP-1 (later branded Copaxone),

passing preliminary clinical trials in 1986. The treatment reduced the relapse rate for people in the early stages of relapsing-remitting MS by anywhere from 25 percent to 30 percent in clinical trials. At that time, the Weizmann Institute teamed up with Teva to bring the drug to market.

Since Copaxone's patent had expired during the long development process, Teva requested and received orphan drug status from the U.S. Food and Drug Administration. About one-third of the 350,000 MS sufferers in the United States stood to benefit from the treatment.

Initially launched in Israel, Copaxone earned FDA approval in 1997. The roll out achieved several milestones, both for Teva and for MS sufferers. Copaxone was the first drug developed in Israel to achieve FDA approval for distribution in the United States. Unlike its interferon-based competitors, it was also the first drug developed specifically to treat MS. Copaxone has been approved for the treatment of relapsing-remitting multiple sclerosis. In a two-year, randomized, double-blind, placebo-controlled trial of 251 patients, Copaxone was shown to reduce relapses by an average of 29 percent when compared with placebo.

Multiple sclerosis is a chronic, often progressive disease of the central nervous system (brain, spinal cord and optic nerves), that affects 350,000 people in the United States (approximately 10,000 people are diagnosed each year).

For Eli Hurvitz, the approval of Copaxone by the

FDA was one of the great moments in his life and ranks in parallel with his being awarded the Israel Prize.

Under Hurvitz's leadership, Teva has become a global pharmaceutical company specializing in the development, production and marketing of generic and proprietary branded pharmaceuticals, as well as active pharmaceutical ingredients. It is among the top-20 pharmaceutical companies – and is the largest generic pharmaceutical company – in the world.

Net income for 2007 reached \$1.95 billion, a 5 percent increase over 2006. Net sales for 2007 were \$9.4 billion, with global Copaxone sales of \$1.71 billion.

Teva's share price and net profits rose thousands of percentage points during Hurvitz's active leadership tenure. Hurvitz served as Teva's President and Chief Executive Officer for over 25 years and recently completed over 40 years with Teva. Hurvitz has served as Chairman of the Board of Teva since April 2002. Hurvitz received the Israel Prize for Lifetime Achievement for a Unique Contribution

to the Society and to the State of Israel.

Hurvitz, 78, stepped down as CEO in 2002.

“The dynamics of the generic industry are influenced by the growing number of people going on pension, people who are sicker and have less money for medicinals. As a result, the outlook for generics has become more expansive.

When our generics are launched, in a few days we have 90 percent of the market and in a few weeks the whole market,” says Hurvitz.

As a result, he points out Teva is able to post 20 percent after-tax profit margins. In the western world, generics are garnering 60 percent of the market. In Europe, the development is slower due to the splitting up of industry and an absence of drug chains. “Teva, by far, is the world's largest generic producer. It has carved for itself market leadership and future strategy,” says Hurvitz. Teva has about 160

drugs in the FDA pipeline waiting approval. This sum is greater than that of the next two largest companies in the field. Teva is expected to double its sales in the next four to five years and to maintain its profit margins.

### Businesses ink deal with Israeli incubator

Mahoning Valley business and political leaders hailed a signing with an Israeli clean technology incubator as an important step in restoring the area's image as a world economic force.

"We plan to create a global network for clean technology headquartered in Youngstown," Michael Garvey, president of M7 Technologies, said after joining fellow Youngstown businessman Jack Scott in signing an agreement with LN Green Technological Incubator Ltd. of Haifa, Israel.

The signing at the Butler Institute of American Art on the Youngstown State University campus opens the door to as many as 2,000 jobs over seven to 10 years, a goal Garvey said is reasonable with projects employing 40 to 50.

Leaders see the local effort as a cradle for startup companies dedicated to environmental technology, such as ways to make buildings more energy efficient, along with generating power through municipal waste, solar, wind and other renewable methods

When Israeli billionaire Moshe Yanai was a student at the Technion-Israel Institute of Technology in Haifa, Israel, he remembers life being "difficult and demanding." So the tech whiz is funding an incentive to make life a little better for Technion students by funding an incentive for professors to be nice.

Yanai donated 40 million shekels -- more than \$10 million -- to establish the prize, which will last for 20 years, Israel National News reports. Professors will be chosen by students based on the excellence of their teaching and "good personal interaction with students." Prizes will be distributed in upwards of 100,000 shekel increments.

Yanai explained to the Chronicle of Higher Educa-

tion his motivation for starting the prize:

"The Technion gave me my entry ticket to the world of computers, and I owe it much of my success, but my time there was one of suffering," he said. "My personal experience in the Technion was not because I had difficulties learning but because of my treatment by professors."

Yanai also said he wanted to "change the atmosphere" of the school and reduce its focus.

According to IBM, Yanai is "One of the most influential contributors in the history of the data-storage industry. His 30 years of technical expertise and design innovation are legendary."

What do you think of this prize? Weigh in below.



### ECI enters into partnership with BT's Openreach for UK's next-gen broadband

ECI Telecom (Nasdaq:NMS: ECIL | PowerRating), a provider of next-generation network solutions, said today that it has been chosen as a strategic partner by Openreach, part of the BT Group (NYSE: BT | PowerRating), in BT's drive to upgrade the UK's broadband infrastructure.

ECI has been selected as one of BT's strategic partners by Openreach to help bring a large scale super-fast broadband solution to the UK and realize the Super-Fast Fibre Access project Next-Generation Access (NGA).

Openreach's NGA project is designed to meet the needs of UK customers, regulators and the industry by implementing an open, scalable, secure network suitable for today's and tomorrow's demands, Openreach plans to invest a further GBP1.0bn, out of a total of GBP2.5bn, to extend deployment of fibre-to-the-premise (FTTP) and fibre-to-the-cabinet (FTTC) to around two-thirds of the UK by 2015.

Under this multi-year agreement, financial details of which were not disclosed, ECI will provide Openreach with an optimized solution to simplify network aggregation and increase scalability and flexibility

Openreach will deploy ECI's Hi-FOCuS Multi-Service Access Node (MSAN) to roll-out a FTTP and FTTC network countrywide.

The new network displays a first-of-its-kind architecture, based on state-of-the-art fiber-to-the-premise (FTTP) GPON and fiber-to-the-cabinet (FTTC) VDSL2 technologies.

ECI Telecom provides communications platforms to carriers and service providers worldwide.

Openreach provides communications providers with services and products associated with the BT network.

Israel to offer sweeteners to boost high-tech  
The Israeli government is preparing to bolster high technology industry, a crucial sector of its economy that struggles with fundraising and a looming shortage of skilled employees.

The plan will give tax breaks to start-up companies and guarantees for Israeli pension funds that invest in the venture capital funds that support high-tech industries. The government will offer subsidies to foreign banks to establish research and development centres for financial technology in Israel.

Haim Shani, director-general of the finance ministry, said the government saw this programme "as a priority". The aim is to boost an industry that accounts for 40 per cent of Israeli exports and 15 per cent of the country's gross domestic product.

Government help was essential at the outset of Israel's high-tech boom, when a state-backed fund was created in 1993 to lure foreign venture capitalists. The industry enjoyed rapid growth, partly because the armed forces, in which every

Jewish Israeli is obliged to serve, produced many future entrepreneurs with highly tuned skills in technology. Immigration from the former Soviet Union in the 1990s also brought an inflow of scientists and engineers.

However, there are concerns that the sector is losing its competitive edge. Mr Shani, a former chief executive of Nice Systems, one of Israel's biggest technology companies, said: "The fact that something is strong today does not necessarily mean that it will continue to be strong for many years."

The financial crisis damaged the venture capital companies that account for 70 per cent of funding for the technology industry. In the first quarter of this year, high-tech companies raised \$234m (€181m, £153m) from venture capitalists, the lowest quarterly amount in five years, according to the Israel Venture Capital Research Centre.

Israel is also worried about possible skill shortages. The number of students taking degrees in engineering and science from Israeli universities is falling. More Israeli scientists are choosing to complete their graduate studies, and later find work, abroad, especially in the US.

Mr Shani said the government plan would give returning scientists income tax benefits on royalties they might earn from commercialising their research. A position would be established within the finance ministry of chief information officer, responsible for co-ordinating all the government's efforts to help the technology industry.

The finance ministry may also offer tax breaks to Israeli start-ups to entice them to have initial offerings locally, instead of on the Nasdaq Stock Market in the US. About 130 Israeli technology companies are traded in the Tel Aviv stock exchange, but 43 are on the Nasdaq – more than any other country except the US and Sweden.

Ester Levanon, chief executive of the Tel Aviv stock exchange, said that a local listing had clear

financial advantages. An initial offering in Tel Aviv cost about half as much as it would on the Nasdaq, while maintaining the listing could be 90 per cent cheaper.

### Life sciences become big business in Israel

Life science industry figures mingle at the Tel Aviv ILSI-BioMed conference, which had more than 7,000 people from around the world, June 2010

Yaron Aizenbud lays out in neat rows a set of patented titanium tools designed for back surgery, picks out a curved drill that matches the curve of a spine and a plastic model of vertebrae, and simulates how the drill is used to stabilize a damaged spine.

Aizenbud and the other founders of the small Israeli start-up Scorpion Surgical Technologies hope their medical devices will become a new solution for back operations, particularly for people with osteoporosis, in some cases even eliminating the need for replacing ruptured discs.

Scorpion Surgical was among the hundreds of companies displaying their wares in a maze of rooms and bright lights at a recent biotech and life sciences convention in Tel Aviv. Among them were firms with home-grown advances in cell and gene therapy, imaging and heart disease drugs.

Aizenbud, a veteran of Israeli high-tech who has worked for IBM, Amdocs and a host of start-ups, spoke of the special satisfaction in switching gears to the life sciences.

“You feel the difference in what you are doing,” he said. “This is about contributing something to the public.”

The field of life sciences, an umbrella term that refers to medical devices, pharmaceuticals and biotechnology, has become big business in Israel. There are more than 1,000 companies, and another 80 join the field every year, according to industry estimates.

Last year, life sciences accounted for \$6 billion in Israeli exports, mostly to the United States, making it one of Israel’s biggest exports.

Israel tops the list of countries in medical device patents per capita and is fourth in the world for biotechnology patents per capita.

Observers credit Israel’s success in this extremely competitive market to the nurturing ecosystem the country has produced to foster life sciences innovation. The ecosystem brings together a combination of top research at Israel’s universities that transfers to companies, many of which get their start in state-subsidized “incubators.” In 2000, the government designated life sciences a priority sector.

### Israel and the US Sign Deal to Develop Arrow 3 Anti-Missile Defense System

The deal continues a long and successful history of cooperation between Israel and the US in the field of anti-missile technology. Photo Archive: IAll Articles

Israel’s Ministry of Defense and the U.S. Department of Defense signed a deal on Sunday evening (July 25) to develop the Arrow 3 anti-missile defense system

Israel’s Ministry of Defense and the United States Department of Defense signed a deal on Sunday evening (July 25) to develop the Arrow 3 anti-missile system, integrating Israel’s anti-missile systems. The Arrow 3 will make it possible for Israel to intercept long-range ballistic missiles and weapons of mass destruction from outside the atmosphere.

The agreement was signed by Brig. Gen. Ofir Shoham, head of the Ministry of Defense Administration for the Development of Weapons and Technological Infrastructure (MAFAT), and by Lt. Gen. Patrick O’Reilly, head of the US Missile Defense Agency.

The new interceptor will complete Israel’s anti-missile multilayered capacity, which includes the

Iron Dome, the David's Sling, and the Arrow. The Iron Dome is a defense system against short-range missiles and rockets which will be operational by November after it recently successfully passed final tests. The David's Sling system is intended to intercept mid-range missiles. Finally, the Arrow system is a defense system against long-range ballistic missiles and missiles carrying atomic warheads.

**New Invention at the Weizmann Institute:**

**Enables Severely Disabled People to Communicate and Steer a Wheelchair by Sniffing**

A unique device based on sniffing – inhaling and exhaling through the nose – might enable numerous disabled people to navigate wheelchairs or communicate with their loved ones. Sniffing technology might even be used in the future to create a sort of “third hand,” to assist healthy surgeons or pilots.

Developed by Prof. Noam Sobel, electronics engineers Dr. Anton Plotkin and Aharon Weissbrod and research student Lee Sela in the Weizmann Institute's Neurobiology Department, the new system identifies changes in air pressure inside the nostrils and translates these into electrical signals. The device was tested on healthy volunteers as well as quadriplegics, and the results showed that the method is easily mastered. Users were able to navigate a wheelchair around a complex path or play a computer game with nearly the speed and accuracy of a mouse or joystick.

Sobel: “The most stirring tests were those we did with locked-in syndrome patients. These are people with unimpaired cognitive function who are completely paralyzed – ‘locked into’ their bodies. With the new system, they were able to communicate with family members, and even initiate communication with the outside. Some wrote poignant messages to their loved ones, sharing with them, for the first time in a very long time, their thoughts and feelings.” Four of those who participated in

the experiments are already using the new writing system, and Yeda Research and Development Company, Ltd., – the technology transfer arm of the Weizmann Institute – is investigating the possibilities for developing and distributing the technology.

Sniffing is a precise motor skill that is controlled, in part, by the soft palate – the flexible divider that moves to direct air in or out through the mouth or nose. The soft palate is controlled by several nerves that connect to it directly through the braincase. This close link led Sobel and his scientific team to theorize that the ability to sniff – that is, to control soft palate movement – might be preserved even in the most acute cases of paralysis. Functional magnetic resonance imaging (fMRI) lent support to the idea, showing that a number of brain areas contribute to soft palate control. This imaging revealed a significant overlap between soft palate control and the language areas of the brain, hinting to the scientists that the use of sniffing to communicate might be learned intuitively.



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